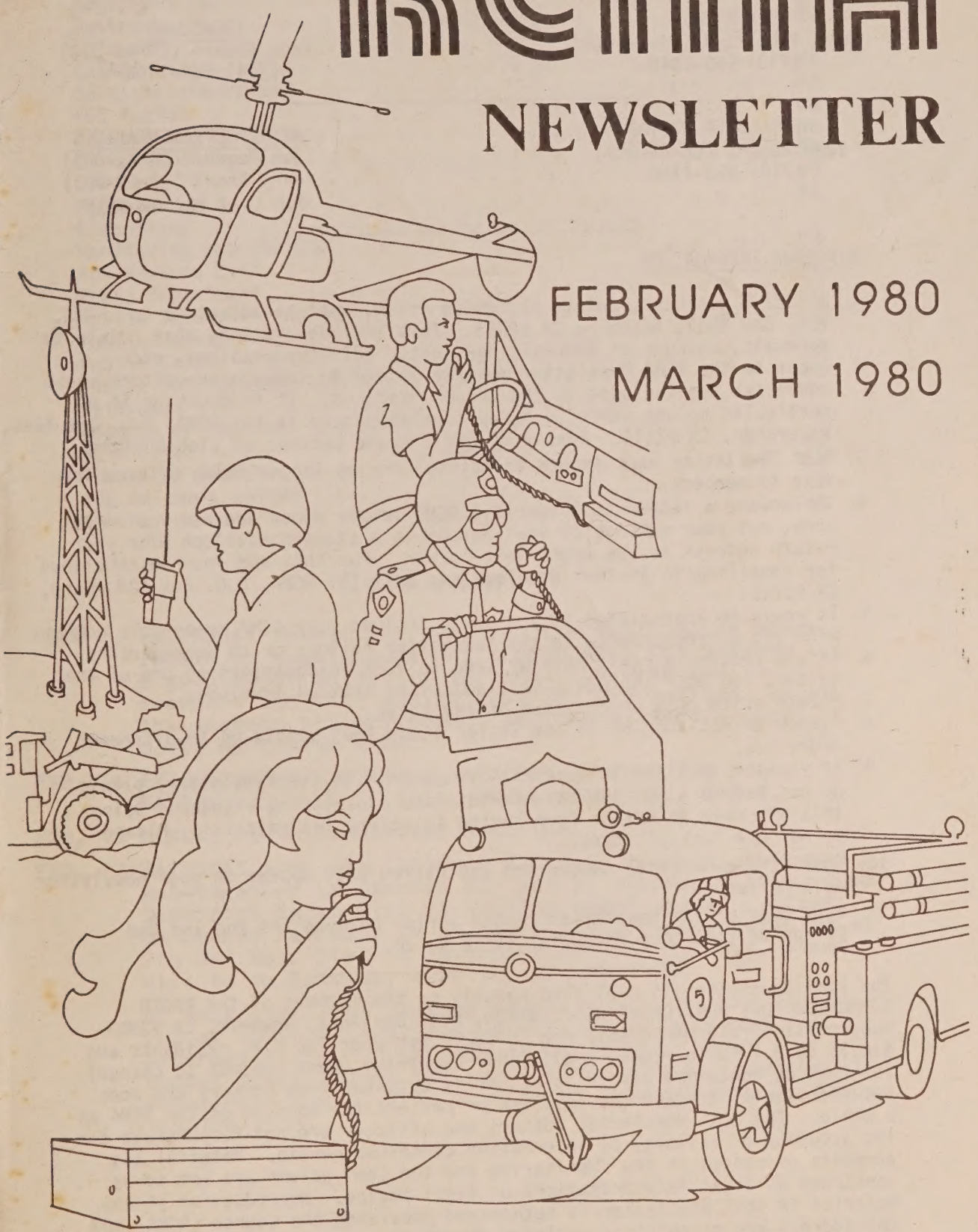
RCMA

NEWSLETTER

FEBRUARY 1980

MARCH 1980



FIRST NATIONAL AND INTERNATIONAL ORGANIZATION
OF MONITOR RADIO LISTENERS

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FOR YOUR INFORMATION

1. All club business, unless otherwise noted, must be addressed to: RCMA, P.O. Box 4563, Anaheim, CA 92803. This includes matters that relate to renewals, changes of address, Newsletter delivery problems, etc.
2. Input to the RCMA Newsletter must be mailed to the proper editors whose addresses are included in the column headings. If in doubt or if no particular column seems to be appropriate, send it to: RCMA, P.O. Box 4693, Riverside, CA 92514. Please do not include matters of club business.
3. RCMA Newsletter back issues (reprints) are no longer being offered for sale to members.
4. To forward a letter to a specific RCMA member whose address you do not know, put your message to that person in a stamped envelope with your return address in the upper left corner. Put this and your instructions for remailing in another envelope and mail to: RCMA, P.O. Box 408, Earp, CA 92242.
5. It would be appreciated if you would include your RCMA membership number with all correspondence to the Newsletter Editors or to Headquarters.
6. If you require a reply when writing to RCMA Headquarters or one of the Editors you MUST include a self-addressed stamped envelope.
7. Please write only on one side of the paper.
8. Please do not combine in one letter items that should go to different addresses.
9. If you are inclined to type what you submit to the Newsletter, please do not exceed a 6¼ inch column width and please single-space. Doing this may save an editor from having to retype the material. Please do not use "*script*" type.
10. Your RCMA membership number and expiration date appear on your Newsletter mailing label.
11. Your copy of the Newsletter should arrive between the 2nd and 3rd Friday of the month for which it is dated.

The RCMA Newsletter is published monthly by the members of the RADIO COMMUNICATIONS MONITORING ASSOCIATION, P.O. Box 4563, Anaheim, CA 92803. Subscription rate/membership fee is $8.00 per year for U.S. residents and $10.35 (U.S.) for persons in all other countries (dues subject to change).
Information contained herein is primarily obtained from members and does not necessarily present the position or reflect the opinion of the RCMA as a whole. The RCMA Newsletter editors and officers are not responsible for the accuracy or validity of information contained herein. Material and comments presented in the "Monitoring and the Law" column are not to be construed as legal interpretations or legal advice. Reproduction of any material in this Newsletter is authorized providing the source (RCMA) and the address are given (this excludes direct photocopying).

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** Calendar **

FEB. 6, WEDNESDAY Newsletter prepared for mailing. We place labels on newsletters and bundle them for mailing - a good opportunity for informal conversation about scanners and club activities! You are invited. Be at the Anaheim Library branch at 1340 S. Euclid about 6:30; we finish about 8 P.M.

FEB. 15 FRIDAY GENERAL MEETING, MERCURY SAVINGS AND LOAN, VALLEY VIEW AND LINCOLN, BUENA PARK, CA. 8 P.M.

FEB. 18 MONDAY April Newsletter deadline.

FEB. 23 SATURDAY Iowa and Illinois R.C.M.A. members: Informal get-together is planned for you in Davenport Iowa. The Davenport Radio Club is holding their annual Hamfest on Sunday February 24 at the Masonic Temple Building at 7th and Main Sts. in Davenport and the R.C.M.A. event will be on Saturday starting around noon.

At this time, the planned location will be the Ramada Inn at Route 61 and IS80. Rooms can be reserved for Saturday night, if needed, at the Ramada or at a budget motel, Excel Inn, across the street. Additional info: Mike Ravis, 2410 W. 40th St., Davenport, IA.52806, 319-386-7555.

Reports of Meetings and Officers

SUMMARY OF THE DECEMBER 21, 1979 GENERAL MEMBERSHIP MEETING.

The meeting was called to order at 8 P.M., in Buena Park, Cal., by Jerry Short, President. 26 members attended the meeting.
After brief announcements by Jerry and Noel Robertson, Secretary, the meeting was turned over to Lt. Ken Mass, Operations Officer of the 11th Coast Guard District, located in Long Beach, California.
Lt. Mass gave a very thorough talk on the duties of the Coast Guard and the types of communications systems presently used by them. After his speech, he answered about 100 questions from the members present.
The meeting was adjourned at 9:50 P.M., by Jerry.

SUMMARY OF THE JANUARY 9, 1980 BOARD OF DIRECTOR'S MEETING.

The meeting as called to order at 6 P.M., at the Anahein library, by Jerry Short, President. All Board members were present except Bob Leef, 1st Vice President. The Board meeting was held in conjuction with the Newsletter put together.

BUSINESS CONDUCTED:

1. The Secretary reported on his talk with Mr. Joseph Merdler, Attorney at Law, on the status of the incorporation of R.C.M.A. After a thorough discussion of the recommendations made by Mr. Merdler, the Board voted to retain Mr. Merdler as the Attorney for the Society, with respect to the Incorporation, Constitution and Bylaws.
2. Iden Rogers, Editor and 2nd Vice President proposed that the Newsletter "Month", as shown on the cover of the Newsletter, be advanced one month. Approved by the Board. The issue that is to be published in February 1980 will show - "February-March 1980".
3. Iden proposed that an Advertising Chairman be appointed to be in charge of advertising, and that the rates for advertising in the Newsletter be increased as follows:
   $36.00 for a full page ad, per month.
   $20.00 for a half page ad, per month.
   $12.00 for a quarter page ad, per month.
   Both items were approved by the Board.
4. The Board again voted to offer reprints of back issues of the Newsletter to members, subject to determining the actual cost of reproduction and postage The Secretary was requested to report to the Board at the February meeting.
5. A general discussion was held about what should be done if no one becomes a candidate for the office of Secretary and Treasurer.
6. The meeting was adjourned at 7:40 P.M., and re-convened as the Newsletter Mailing Committee, by Jerry, with thanks from the entire Board for those members who came to help with the mailing of the January Newsletter.

SUMMARY OF TREASURER'S REPORT
For Period Ending January 15, 1980

Balance as of December 15, 1979		$ 1283.74
Received for membership:		
New members (96)	$785.02	
Renewals (28)	231.50	
Received for advertising	85.00	
Received for directory	45.00	
Received for back issues	247.25	
Miscellaneous received	5.00	+ 1398.77

Reports of Meetings and Officers (continued)

Expenses:

January Newsletter (printing, etc.)	$ 699.07	
Postmaster (bulk mailing account)	60.00	
" (renewal of 3rd class permit)	40.00	
" (P.O. Box rent - 12 months)	56.00	
Officers' expenses	33.16	
Attorney (for incorp. as non-profit corp.)	500.00	
Back issue reprints	460.89	
Refund	8.00	- 1857.12
	Balance	825.39

THE editor's column

Iden Rogers, P.O. Box 4693, Riverside, CA 92514

REASON FOR THE FEBRUARY/MARCH ISSUE

Recent Post Office delays cause the Newsletters to arrive in other parts of the country in the following month. It doesn't seem right to have the December issue arrive in January! A solution to this is simply to advance the month that is printed on the Newsletter by one month. This issue is labeled the "February/March" issue rather than the February issue. This is done so we won't get many letters asking where the February issue is. This is not really a combining of two months into one issue, it is only a change by one month of what is printed on the Newsletter. Your membership will automatically expire one month later to compensate for this change. The end result of this will be that your Newsletter will arrive early in the month for which it is dated or possibly at the last of the previous month!

NEWSLETTER EDITORSHIP

Would anyone like to take over as RCMA Newsletter Editor or Assistant Editor? Please contact Iden (714) 688-1168, 5PM-8:30PM (weeknights best).

RCMA PAID ADVERTISING RATE INCREASE

RCMA paid advertising rates have been increased. This, of course, will not affect any ads that have already been paid for and are now in the works. Any person or company who is considering advertising must obtain the Revised RCMA Advertising Guidelines. Send an SASE with your request to the RCMA Anaheim address.

NO BALLOT THIS MONTH

A ballot with names of candidates for the offices of Secretary and Treasurer was to appear this month but no candidates. If we don't have volunteers to run for these offices and to attend to the responsibilities of running the club, the club will be in a little bit of a bind. Members interested in these offices should contact any of the officers as soon as possible. If we have to go to a paid bookkeeper it will cut into our finances and the Newsletter size will have to be reduced. We need your help.

DECEMBER ISSUE

Many members received their December issue late. They were mailed on time as always. The Christmas mail may have delayed delivery. In many cases, members wrote to inform us they had not received their December

issue but it is believed that many have since received them. If you have not yet received your December issue, please write again. In the future wait at least 3 weeks after your normal delivery date before writing. Thanks.

MAILING COMMITTEE

The Newsletter Mailing Committee which meets once a month (in Anaheim, CA) to affix address labels to the Newsletters and presort them for mailing needs volunteers and a new Chairman. Please contact Jerry 772-1259.

ADVERTISING CHAIRMAN

The club could use the services of a competent volunteer to solicit advertising for the Newsletter and attend to all correspondence relating to advertising in the Newsletter.

FROM GORDON WEST, CB MAGAZINE EDITOR

Congratulations on passing the 1,000 mark! This certainly proves that monitoring is an exciting hobby that more and more people are getting into. At CB Magazine, we hope to provide the lure of monitoring by including selected topics from R.C.M.A. newsletters. All pieces we use will give full credit to the original contributor. Contributors reading their articles reprinted in CB Magazine may drop me a note, and I'll personally see that they are given a free year's subscription to our publication which is our way of saying "thanks" for the authoritative article.

In reading the comments about R.C.M.A.'s relationship with CB Magazine, I would like to emphatically state that the statement "I do also feel that only legal use of CB should be included in the magazine" is what we're all about -- nowhere in the last 12 issues under my direction have we advocated or even implied using citizens band illegally. Possibly the author of this quote has us mixed up with another publication that delights in making the FCC look silly, with many pages spent on why the rules won't work, and why so many folks are operating out of band. This is not our magazine -- we're the one running the exclusive FCC interview column, and the commissioners are working closely with us.

As for radar detectors as a monthly feature, I'm giving this some serious thought, but I'll need some more comments before I make up my mind. The way I see it, if the police can use radar, then we can use radar detectors. It's much like monitoring receivers -- it's one thing to monitor, and another thing to drive to the scene and get tangled up in the excitement. It's one thing to watch your speed through the use of a radar detector, and it's another thing to install a radar detector and run double the limit.

Finally, I encourage all R.C.M.A. members to write in regarding our lab tests. These tests are performed by a non-commercial agency in the San Francisco area. However, there's no better test than by actual scanner listeners -- there's no way that anyone in a laboratory could create intermod as found in large cities -- so the ultimate test is through R.C.M.A. members. Please forward your scanner reviews to Iden Rogers, your editor, and we may republish them in upcoming issues of CB Magazine.

THE editor's column (continued)

CB Magazine will continue to place monthly ads on a free of charge basis to R.C.M.A. To all of you, good monitoring, and have a happy holiday season.

By the way, if you're interested in amateur radio, and always wanted to get your license, tune into our February issue -- unlike any other magazine in history, we're going to be the first to feature a nine part series on obtaining your Novice Class license.

73's.

Gordon West, WB6NOA
CB Magazine - Managing Editor

Editor's comment: I personally am grateful to "CB Magazine" for so generously advertising RCMA. It has helped to bring information about our great club to many who might otherwise not have learned about it. I feel that giving some RCMA articles to "CB Magazine" for publication is a fair trade for the publicity.

Regarding radar detectors --- How many radio hobbyists sit at home listening to their police radar detectors? Is it really a radio hobby?

This column is for reporting Public Safety and Special Emergency frequency information, radio system details, radio codes, dispatch areas, unit numbering systems, etc. for police, sheriff, fire, forestry (except USFS), fish and game, highway patrol, state police, prisons, prisoner work camps, local government, highway & street maintenance, port authority/bridge maintenance, animal control, ambulances, paramedics, hospitals, life guards, ski patrol, search & rescue, flood control, civil defense and disaster organizations. Input and questions for this column must be sent to the proper regional Public Safety editor listed below.

PUBLIC SAFETY - EAST

Send Public Safety and Special Emergency frequencies, radio system details and questions for Connecticut, Delaware, District of Columbia, Florida, Georgia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, South Carolina, Vermont, Virginia and West Virginia to: Richard Barnett, P.O. Box 428, Newton Highlands, MA 02161.

I would like to start off this month by asking members in the states of Maine, Vermont, New Jersey, Ohio, West Virginia, North and South Carolina and Georgia to especially give some thought to sending me your local frequency information. I have not received much data at all on these states while members in Virginia, Pennsylvania and New York have been very generous and thus all scanner enthusiasts in those areas have benefited greatly.

FLORIDA

From JAN(FL-010), ROBERT(FL-012) & MARK(FL-024)

Florida Highway Patrol-Sunshine State Parkway Radio System:

Call Signs - KM6552 & KF5504

Frequency #1	453.575	Troopers, Toll Plazas
Frequency #2	453.625	Troopers, Toll Plazas
Frequency #3	453.675	Tow Trucks, Service Plazas
Frequency #4	453.725	Tow Trucks, Service Plazas

Note: F1 & F2 Linked, and F3 & F4 linked

UNIT BREAKDOWN:

Parkway	=	Dispatcher (Patrol)
Turnpike	=	Dispatcher (Service)
100 thru 300	=	Troopers
400's	=	Toll Plazas (4 prefix + Exit Number)
500's	=	Equipment Servicemen
600B's	=	Service Plazas
600W's	=	Tow Trucks

EXAMPLE: 601B = Service Plaza #1, 601W3 = Tow Truck #3 from Service Plaza #1, 432 = Toll Plaza - Exit #32, 256 = State Trooper

Radio Network is broken into two area. Wildwood to Ft. Pierce and Ft. Pierce to Homested. The communications in each area is kept separate, and only linked in a emergency.

From KEN(FL-025)

Broward County Sheriff's Department:

Channel #1	155.250	Repeater In,	154.710	Repeater Out	- DISPATCH
Channel #2	155.415	" ",	154.740	" "	- RECORDS
Channel #3	155.640	" ",	154.950	" "	- TACTICAL-MOBILE
Channel #4	155.685	" ",	155.130	" "	- AIRPOTS-PORTABLE

ALPHA CODES

ALPHA	= Patrol Midnight Shift	MIKE	= EMS
BRAVO	= Patrol Day Shift	NOVEMBER	= P.S.O.
CHARLIE	= Patrol Evening Shift	OSCAR	= Boats, Divers
DELTA	= Sergeant	QUEBEC	= Medical Examiner, State Attorney, Training and Disaster
ECHO	= Lieutenants		
FOXTROT	= Foot Patrols	ROMEO	= Reserves
GOLF	= S.W.A.T. Unit	SIERRA	= Chief, Sheriff and Captain
HOTEL	= Transportation		
INDIA	= Airports & Port	TANGO	= Traffic
JULIET	= Juvenile	UNIFORM	= Off Duty Personnel
KILO	= DETECTIVES		
LIMA	= Technical		
VICTOR	= Organized Crime	WHISKEY	= Civil Division
X-RAY	= Control (BASE) Stations	YANKEE	= Tactical
ZULU	= Crime Control		

Unit Call numbers consist of a number, an Alpha Code and another number. EXAMPLE: 1 Bravo 32 . 1 indicates agency or Department; Bravo is the type of unit, 32 is the unit number, or in the case of patrol units it is the zone number.

Public Safety - East (continued)

Also using these channels:
1 = Broward County Sheriff
23 = Hacienda Village
25 = Sea Ranch Lakes
31 = State Attorney's Office
33 = Medical Examiner

EXAMPLE: 23 Romeo 2 . 23 is Hacienda Village, Romeo is a Reserve Unit, and 2 is Unit Number 2.

Approximately 10 other cities in Broward County use Sheriff no. 2 and no. 3 channels for teletype and tactical use, but with one of three dispatch channels in place of sheriff channel #1. Everything described above is dispatched from The Broward County Courthouse in Fort Lauderdale.

C.D.C. North 154.890 Repeater Output (KIG937):

North Lauderdale, Tamarac, Margate, Parkland

C.D.C. Central 154.860 Repeater Output (KIG937):

Lauderhill, Plantation, Sunrise

C.D.C. South 154.800 Repeater Output (KIG937):

Pembroke Pines, Cooper City, Davie, Mirimar

In addition 155.070 (Repeater Output) is used as channel two for all above cities and except the Sheriff's Department.

CITY POLICE DEPARTMENT PREFIX NUMBERS:
2 = Sunrise
3 = Margate
4 = Plantation
5 = Tamarac
6 = Lauderhill
7 = N. Lauderhill
10 = Miramar
11 = Cooper City
12 = Pembroke
17 = Davie
21 = E.M.S. (KBF569)

Unit call numbers and Alpha Codes are same as for Sheriff's Dept.

Emergency Medical Service is dispatched on 462.975 (Repeater Output) and can use the MED channels 1 through 8, which ARE on repeaters.

Broward County Local Government:

Please check back RCMA newsletters for much more Florida data listed when there was a Southeastern U.S editor

151.055 Dept. of Streets & Highways
158.775 Traffic Engineering, Animal Control, Parks
451.050 Utilities Department
453.825 School Buses
453.950 School Maintenance
470.5875 Mass Transit

From Geary Jefferson:

JACKSONVILLE, FLORIDA

453.050 Zone 1 Patrol
453.100 Zone 2 Patrol
453.150 Zone 3 Patrol
453.400 Tactical
453.200 Detectives (investigative)
453.250 Detectives (investigative)
453.300 National Crime Info Center
453.325 Vice
453.350 Staff Car to Car
453.550 Robbery

PUBLIC SAFETY - CENTRAL

Send Public Safety and Special Emergency frequencies, radio system details and questions for Alabama, Arkansas, Iowa, Kansas, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Nebraska, North Dakota, Oklahoma, South Dakota, Tennessee and Texas to: Mike Redman, P.O. Box 1177, St. Charles, MO 63301.

Send material and questions for Illinois, Indiana and Wisconsin to:
John Arendt, 327 Boulder Hill Pass, Oswego, IL 60543.

Greetings! As we enter February, one of the coldest months for many states, I hope you are all keeping warm by the fireplace with your monitor at your side. Gas is getting to the point where you can't afford to go anywhere, so what better pastime than monitoring with the informative RCMA publications at your side? I've had the opportunity to become acquainted with David Crowley, Beginners' Corner Editor. He is as enthusiastic about monitoring as he is writing for the RCMA. I encourage all of you with questions of a modest nature to send them to David. He has also consented to prepare an article for my column, for which I am grateful. But don't forget to send me something as well; if you haven't seen your state mentioned here, or even if you have- send in your questions, comments, and frequency usage for the states I cover. You'll be glad you did!

RCMA MIDWEST SPRING FESTIVAL

Yes, I am planning an RCMA Midwest Spring Festival- a jamboree for RCMA monitoring enthusiasts to be held here, in beautiful St. Charles, in the Northwestern corner of the thriving St. Louis metropolitan area, on Saturday, April 12.

Here's a chance to see the unique monitoring station featured in the November RCMA Newsletter, compare notes, meet other RCMA members, swap equipment, exchange frequencies, and more!

I'm giving lots of advance notice so those who may travel from distant points may make plans and arrangements. Here's hoping you can make it- it promises to be a truly exciting radio event. Official commencement of this festival will be 1:00 PM, although guests are welcome anytime after 10:00AM, local time. Termination? Well, whenever the last member leaves. I will attempt to provide delicious, nutritious refreshments to our attending RCMA friends.

Now that you're interested, I've prepared an illustrated informative packet describing the exciting event in more detail, directions to my residence, other attractions in the area, and a restaurant and hotel guide. To obtain one of these enlightening brochures, send 3 15¢ stamps to me at my address above. If you do request a packet, or if you live nearby and need only directions, please contact me two weeks or so in advance of April 12, so I can determine the total number of attendees. I may have to rent the St. Louis Convention Center. I'll look forward to meeting many of you there!

MICHIGAN

LARRY (MI-011) has provided considerable information on the Flint Michigan area. For the entire booklet, send a SASE with a couple of extra stamps to Larry H. Brown, (MI-011), 1717 Leith St., Flint, Michigan, 48506. Questions? Call him at 313-238-5908.

The City of Flint is divided into four patrol zones:

Northwest	100 series cars	South	300 series cars
Downtown	200 series cars	Northeast	400 series cars

Three number units are patrol vehicles; 2 number units are traffic sergeants and accident investigators.

Public Safety - Central (continued)

Flint Police Frequencies: (KQA920)

1. 155.250 LEIN (Law Enforcement Information Network- used for record, wanted, license checks
2. 155.070 Primary dispatch
3. 155.685 Surveillance
4. 156.150 Car to car

Channel 1 is also used by the PERT (Police Emergency Response Team), or SWAT team.

Surrounding Flint is Genesee County, which has a central dispatch operation. Frequencies as follows:(KUZ881/KVT646)

1. 155.610 LEIN (Similar to above)
2. 155.445 Central Dispatch (For all cities except Flint)
3. 155.580 Sheriff's Department primary dispatch
4. 155.865 Surveillance
5. 155.565 Surveillance

All three number units are county sheriff's units; 2 number units are individual township or city police vehicles. Below are the townships followed by township frequency, if used(primary dispatch still done on 155.445), call sign, and number prefix. A three digit prefix indicates a township patrolled by a county sheriffs' unit.

Montrose	155.130/KGQ785	44	Genesee	Low 700s	
Vienna	155.880/KGK545	45	Richfield	155.565/KKV498	69
Thetford		45, 64, 35	Clayton		740
Forest	46.540/KVS260	64	Davison	155.565/KYD993	60,67
Flushing	155.880/KFF384	43	Gaines		35, 730
Mt. Morris	155.715/KWE405	41	Mundy		730
Flint	155.880/KQG328	28	Grand Blanc	155.565/KJI586	16
Burton	155.880/KQT932	18	Grand Blanc	155.715/KOY808	16
Argentine	155.880/KWM574	13	Atlas	155.865/KGJ710	17
Fenton	154.800/KQB515	49			

("Flint" shown just above is Flint Township)

Surrounding and including Genesee County is the State of Michigan. Larry's listings of post locations and map is too extensive for use here- I suggest writing for the copy of his manual. Here are the state police frequencies:

42.480	Aircraft	42.560	car to car
42.580	Dispatch	42.680	Post to Post
42.740	car to base		

ILLINOIS by John Arendt, IL-012

ILLINOIS STATE POLICE This reporter has observed Dist. 4 - Crestwood (KSB231) on a new "HF2" utility frequency 154.68. (Eventurally will be replacing widely used "HF4" 155.46 as utility frequency.)

KENDALL CO., IL - located in the northeastern part of the state - is primarily rural, having a population of approx. 30,000. An estimated 7,000 people (23+%) live in an unincorporated urban area known as Boulder Hill. "The Hill" is surrounded on the north by Montgomery (and Kane Co.), on the west by the Fox River and on the south by Oswego. Sixty percent of all calls for county law enforcement services come from "The Hill". To cope with the "unbalance" in law enforcement services, Sheriff Victor Frantz has designed a three-pronged attack to solve the problem:

1. A sheriff's dept. squad is now assigned virtually full time to patrol "The Hill" (and surrounding Oswego Township area).
2. A "substation" has recently been established in "The Hill" to provide residents with necessary law enforcement services.

3. Foot patrols by sheriff's dept. personnel are being established in the immediate area.

The Sheriff's Dept. "Boulder Hill Substation" was recently open for public inspection. This reporter made a visit - accompanied by wife and son. Upon arrival at the substation, we were met by a deputy and escorted into a squad. All equipment - inside, trunk and outside was displayed and explained.

We were then taken into the substation itself and shown the radio equipment and a microfiche reader. (A CB base station constantly monitors Ch. 9. A Motorola single channel radio is tuned to 39.68 for communication with county squads, Sheriff's HQ in Yorkville, and the neighboring Oswego PD. Microfiche files from the IL "SOS" are kept current and are available for use should the "computer go down").

The substation is manned by trained volunteer help (mainly retired people living in the immediate area) and also by police cadets on a daily basis from 0800 (sometimes 0700) to 2400. Many services can be handled locally (accidents, vandalism, and burglary reports, etc.) rather than a trip to the Sheriff's HQ in Yorkville.

Parked nearby for public inspection was a crime prevention van from neighboring Kane Co. Displays of illegal weapons, fireworks, narcotics and related paraphenalia, counterfeit money, and burglarly prevention methods were shown.

All questions by this reporter and the "Mrs." were answered in a professional and courteous manner. At the time of our visit, Sheriff Frantz was available to answer questions and did answer my inquiries directly after I explained my reason for visiting. This reporter concludes that the monitoring hobby is much more enjoyable when law enforcement agencies attempt to provide answers to hobby - related questions. I only wish that all law enforcement agencies would perform in a similar manner as shown by Sheriff Frantz and the members of the Kendall County Sheriff's Dept.

NEWS ITEMS RELATED TO THE KENDALL CO. SD VISIT:

1. Present 39MHZ Kendall SD freqs. are to "change" during 1980. A switch to UHF for some (or all) operations will be made. Details will follow. (The proposed April 1 changeover seems remote, according to local 2-way radio shop personnel).
2. Oswego PD - currently dispatched by Kendall SD - also has individual dispatch capability (39.40) or can be dispatched by Montgomery PD (155.565).. An additional 39MHZ frequency is being licensed - with UHF radios for Kendall SD to be purchased later.
3. Yorkville PD is now operating on 39.40 in addition to the previously reported and listed 39.50 and 39.68 freqs. UHF radios for the Kendall SD will probably be purchased later.

KANKAKEE CO., IL. From Vic (IL-015), new freqs. for the Kankakee County SD:

154.74	"Tac 1" (Main) Rptr Out (156.09 IN)
155.79	"Tac 2" (Secondary) Rptr Out (154.65 In)
155.19	Detectives
154.71	Car-Car

This reporter has still found some low-band activity in Kankakee Co. 39.46=Intersystem; 39.50=contact with I.S.P. mobile units and neighboring counties and municipalities; 39.56=contact with Bourbonnais PD base and ¢ mobiles.

CHICAGO, IL. PD From Steve (IL-029), the "Radio Codes" currently in use:

1. Disturbance, Domestic
2. Disturbance, Teenagers
3. Disturbance, Drunk

A. Not Bonafide Incident
B. No Person Can Be Found
C. No Such Address

Public Safety - Central (continued)

4. Disturbance, Noise
5. Distrubance, Other Street
6. Illegal Parking
7. Sick Removal
8. Injured Person
9. Man or Woman Down
10. Animal Bite
11. Suspicious Person
12. Citizen Calling for Help
13. Lost Person Found
14. Burglar Or Holdup Alarm
15. Inhalator
16. Fire
17. Escort
18. Traffic Accident
19. Other Misc. Incident

D. No Police Service Needed
F. Peace Restored
G. Advised Warrant
H. Advised to Recontact Us
I. Removed to Hospital
J. Returned to Home or Family
K. Taken to District Station
L. Info. Report Submitted
M. Issued Traffic Citation
N. Issued Violation Citation
O. Advised Legal Help
P. Other Police Service
R. Arrest Made
X. Misc. Incident

The radio codes are used as a combination of numbers and letters, such as "13-John" or "4-Frank".

INDIANA by John Arendt (IL-012)

INDIANA STATE HIGHWAY COMMISSION Frequencies and uses - courtesy of Dave (IN-002):

47.28 District Offices to Mobile (Main Dispatch)
47.36 Mobiles to District Offices, Intersystem (District Office to District Office)

Information on individual districts, sub districts, and numbering routines to follow.

WISCONSIN by John Arendt (IL-012)

WISCONSIN STATE PATROL Frequencies and uses sent in by Bob (WI-001) over a year ago. Low-band pairings are as follows:

42.38B/42.04B HQ to Weight Scales
42.38B/42.04M HQ to Portables or Inspection Cars
42.38B/42.22M HQ to Patrol Cars or Aircraft
42.38B/42.38M Weight Scales to Inspection Cars
42.38M Car-Car and Car-Aircraft

Other frequencies in use by W.S.P. includes:
45.86 Point-Point (Troop-Troop)
155.475 WISPERN Statewide Emergency (NLEEF)

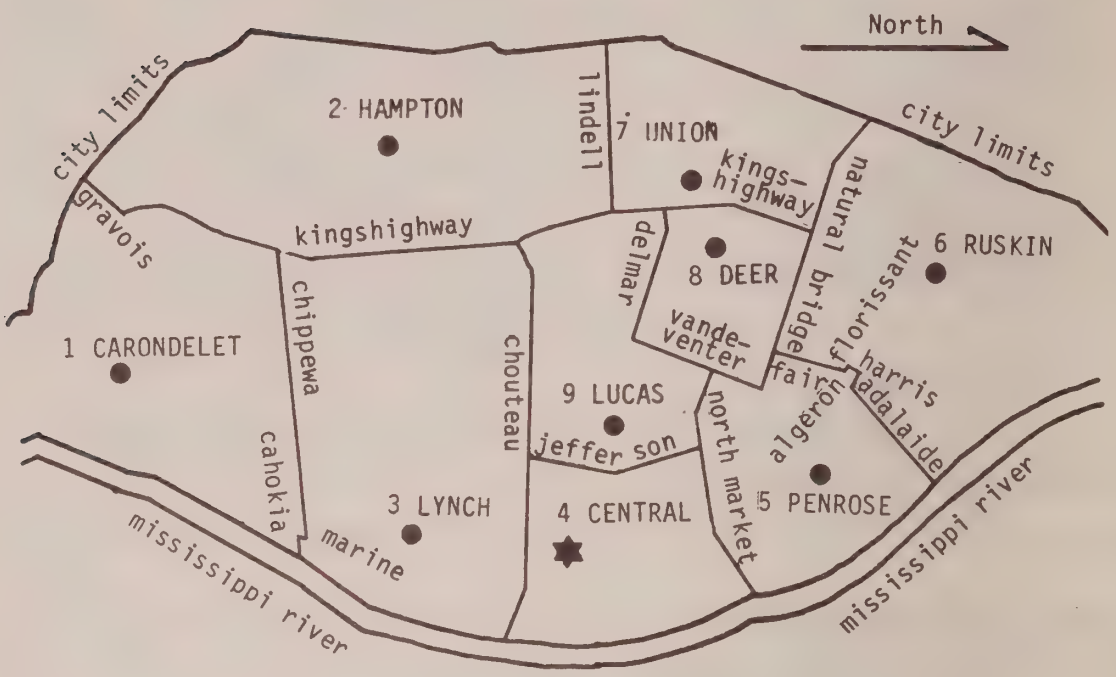
MISSOURI

DAVID (MO-009) has provided this factual and complete article on the St. Louis Police Radio System:

UHF CHANNELS In 1973 the St. Louis Metropolitain Police Department converted from high-band VHF operation to a 12 channel UHF voice repeater system, with mobiles transmitting, as usual, 5 MHz higher than the base. During the same period a digital AVM (Automatic Vehicle Monitoring) system known as FLAIR (Fleet Location and Information Reporting) was developed, assembled and installed by the Wichita division of Boeing, becomming operational in 1975.

VHF CHANNELS From the old VHF allocations (KAB 246) 155.370 was retained as a point-to-point channel and all VHF portables, known as "miniatures" were kept on hand for surveillance activities, with 155.850 miniatures reserved for the Traffic Division.

ST. LOUIS METROPOLITAN POLICE DEPARTMENT
District Boundaries



	CHANNEL	BASE	CALL SIGN	USE
Area I	1-2	460.250	KRF 578	Districts 1-2
	3	460.200	KRF 578	District 3
Area II	4-5	460.275	KRF 578	Districts 4-5
	9	460.025	KRF 578	District 9
Area III	6-8	460.225	KRF 578	Districts 6-8
	7	460.300	KRF 578	District 7
	A	460.050	KRF 578	Information A
	B	460.100	KRF 578	Information B
	C	460.150	KRF 578	Information C
	BOI	460.075	KRF 578	Investigation
	COM	460.175	KRF 578	Commanders
	SOD	460.125	KRF 578	Traffic/Tactical
		460.350	KVI 628	Flair
		460.500	KVI 628	Flair
		155.370	KAB 246	Point-to-point
		155.475	KAB 246	NLEEC
		155.850	KAB 246	Portable:traffic

Public Safety - Central (continued)

Recently facilities for the National Law Enforcement Emergency Communications (NLEEC) channel were installed at headquarters with the capability of cross-patching with the UHF voice system, so that any 155.475-equipped car can communicate with any city mobile. With this exception, all VHF operations are simplex. The city of St. Louis is, in itself, a county, separate politically and jurisdictionally from St. Louis County to the immediate west. St. Louis County police and most county municipal police use VHF systems, so that city and county radio sys-

tems are technically incompatible leading to good deal of point-to-point traffic involving several dispatchers when coordinated action is needed. As more county departments become equipped for 155.475 and personnel on both sides learn how to use it, the city cross-patch facility may eliminte some of the congestion.

UHF VOICE CHANNELS; MOBILE Each city P.D. mobile is equipped with a 12 channel GE UHF transceiver employing the usual push-to-talk button and tone-coded squelch activated by hanging up the microphone. Six district (Assignment-Disposition), three Information and three Special channels are selected by a rotary switch on the control head. Also provided is a INFO/A-D switch by which an officer operating on one the six A-D channels can automatically select the Information channel appropriate to the Command Area of operation. The Command channel, COM, is disabled in patrol cars. Signals from all mobile units, including UHF miniatures, are picked up by voting receivers scattered throughout the city and connected to headquarters by leased telephone lines. Receivers for the A-D channels are restricted to the appropriate districts.

UHF VOICE CHANNELS; BASE Transmitters for the A-D channels are located in the districts, while transmitters for the three Information and Special channels are at headquarters. Located in the radio room are six district, one information and one supervisory console. Consoles for the Command Post (COM), Bureau of Investigation (BOI) and Traffic Base (SOD) are in other parts of the building, but the Special Operation and Deployment (SOD) channel can also be operated from the supervisor's console. The Compaint Evaluation (telephone) operators and all dispatchers can simulcast an All Points Broadcast (APB) on all but the COM channel. Each dispatcher can receive and transmit simultaneously and can over-ride APBs. This complex facility permits a close interaction between the dispatcher and field officers which must be especially reassuring during emergency and hazardous operations.

The information dispatcher has access to the NCIC, MULES (Missouri Uniform Law Enforcement System), REJIS (Regional Justice Information Service) and DOR (Department of Revenue) computer files. When a car transmits on an information channel the information dispatcher activates a lighted panel on a large status board, indicating to other dispatchers that the car is off its regular channel. Ten signals are not used,as status codes are handled by the FLAIR system.

FLAIR SYSTEM; MOBILE In addition to the voice transceiver, each FLAIR equipped vehicle has a separate RCA UHF transceiver, with a 5 dB gain antenna, in which the voice circuits have been disabled. Inputs from a heading sensor, an odometer and from a coded signal panel on the dashboard are digitized and transmitted to the base receiver about once every second. Each car has a time slot, designated by its FLAIR number, in which to transmit its data in relation to a synchronizing pulse transmitted by the base. Each FLAIR RF channel can handle up to 200 cars. FLAIR transmissions (KVI 628) are exempt from identification requirements (Part 90.239) and have no voice content.

The FLAIR panel resembles a hand-held calculator and has keys 0-9 for entering one of 99 codes, a Transmit and a Clear key, a two-digit LED display and an Emergency button. To send a code the officer enters the digits, presses the Transmit key and then the Clear key when the code is acknowledged by the dispatcher on the voice channel.

FLAIR SYSTEM; BASE The base equipment includes an RF data terminal, a minicomputer, mass-storage devices, line printer, card reader, teletype and a video processor for the dispatchers' color map display. System and software details are proprietary to Boeing, but is can be stated that the system works by combination of dead reckoning and map matching techniques. Pilot program tests on a 19-mile course throughout the city established an average tracking error of 72 feet. Among many difficilties experienced at first was the extreme sensitivity of the heading sensors which would send spurious data when passing over buried trolley tracks or in response to moving the spare tire.

FLAIR SYSTEM; CONSOLE The heart of the operational system is the dispatchers color video display which presents a selected segment of the digitized city map at one of three magnification factors, a meesage column with car numbers and status codes, a cloumn indicating the four cars closest to a cursor, graphic symbols showing car locations and the time of day. To service an incident, the dispatcher moves the cursor to the location on the map, assigns one of the four closest in-service cars by voice and waits for the responding car to transmit a 76 or 77, which appears next to the car number in the message column. On arrival the officer transmits a 72 and the dispatcher takes the car out of service removing the car number from the message column. If the car moves before transmitting a 73 (in service) the map symbol will move on the display with no apparent car number, leading to an immediate request from the dispatcher for identification. In addition, a selected car can be tracked, with the map repositioning automatically as the tracking symbol approaches the edge.

When a officer presses the Emergency button on the FLAIR panel an audible alrm sounds at the console, the vehicle number and an E are displayed at the top of the message column, the car's symbol is modified, and the four closest available cars are identified on the map and at the bottom of the message column. The dispatcher simulcasts an APB announcing an officer in need of aid and assigns the four closest cars to respond.

In the course of trcking vehicles the computer continously compares received heading and odometer data with the stored city map. If a discrepancy of more than a certain number of feet occurs, the vehicle's number and a V appear at the top of the screen. Either the officer in the car or the dispatcher can reinitialize the car's location with repect to a fixed location such as an intersection or the district station. The need for frequent re-initialization has led the city to consider recently the installation of electronic "signposts" which would initialize each FLAIR car as it passed by.

DIGITAL STATUS CODES

Code	Activity
7	Send cruising patrol
10	Send ambulance. Routine
11	Send ambulance. Urgent
21	Report your location
26	Unoccupied car check
27	Occupied car check
28	Pedestrian check
29	Building check
30	Going on information channel

Public Safety - Central (continued)

31 Going off information channel
33 High speed chase-criminal
35 Personal relief
40 Meals
41 One man car
42 Two man car
44 Auto accident with injury
54 Female prisoner in car
55 Emergency need to talk to dispatcher
57 Laclede garage
58 Radio repair
59 Wash rack
61 Auto trouble
64 Prisoner processing
67 Gasoline
68 Out-of-service for the watch
72 Arrived at scene
73 In service
74 Voice contact with dispatcher
76 Leaving for scene-low priority
77 Leaving for scene-high priority

(Editor's Note: While these digital status codes are designed for FLAIR transmissions, they are still used over voice radio from time to time and in dispatcher acknowledgements.)

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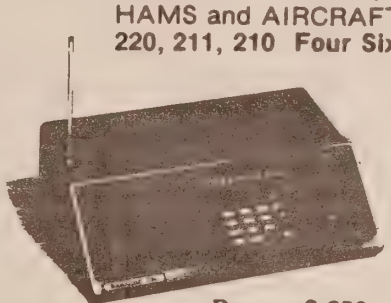

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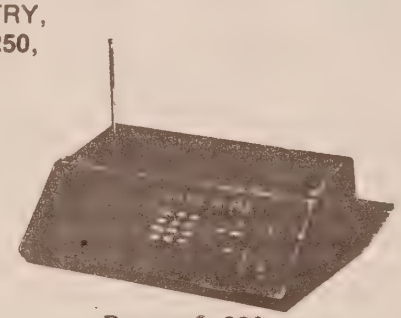

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PUBLIC SAFETY - WEST

Send Public Safety and Special Emergency frequencies, radio system and questions for Alaska, Arizona, California (except 7 Southern Ca counties), Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Or Utah, Washington and Wyoming to: Lyle Galdiera and Bob Gehri, 320[illegible] Corbett, Portland, OR 97201.

Send material and questions for the Southern California counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Diego Ventura to: Eric Christensen, 2360 Brentford Rd., San Marino, CA [illegible]

Well hello there from the now wet and deris strewn country of Portl Oregon. We are just now getting over an ice and snow storm which h much of the city shut-down for almost a week.
Unfortunately, the February column is not going to contain much inf tion as only two entries have been submitted. Enough complaining... let's get on with it!!!

COLORADO

Here's some useful info from G.N. (CO-007)

COLORADO LAW ENFORCEMENT EMERGENCY RADIO

C L E E R

USER	460.425	465.425	460.100	465.1
Adams County	FB2 MO	MO	FB2	
Arapahoe County	FBM	MO	FBM	
Arvada, City of	FBM	MO	FBM	
Aurora, City of	FBM	MO	FBM	
Boulder Communications Ctr.	FBM	MO		
Brighton, City of	FBM		FBM	
Broomfield, City of	FBM	MO	FBM	
Cherry Hills Village, City of	FB2 MO	MO	FBM	
State of Colorado-State Patrol:				
Denver	FBM	MO		
Ft. Collins	FB MO	MO		
Pueblo	FB MO	MO		
Commerce City, City of	FBM	MO	FBM	
Denver, City & County of	FBM	MO	FBM	
El Paso County	FBM	MO		
Federal Heights, Town of	FB	MO	FB MO	
Ft. Collins, City of	FB2			
Glendale, City of	FBM	MO	FBM	
Golden, City of	FBM	MO	FB	
Greeley, City of	FB	MO		
Jefferson County	FB2 MO	MO	FB	
Lakewood, City of	FBM	MO	FBM	
Littleton, City of	FB	MO	FB	MI
Longmont, City of	FBM	MO		
Morrison, Town of	FBM	MO		
Northglenn, City of	FBM	MO	FBM	
Thornton, City of	FBM	MO	FBM	
Trinidad, City of	FBM			
Weld County	FBM			
Westminster, City of	FBM		FBM	
Wheat Ridge, City of	FBM	MO	FBM	
Englewood, City of	FBM	MO	FB2	MC

FBM - Base and mobile under one license, MO - Mobile units onl
FB - Base only, FB MO - Base and mobile under seperate license
FB2 - Repeater, FB2 MO - Repeater and mobile under 2 licenses

Public Safety - West (continued)

Mutual Aid frequencies used for Base to Base (primary use), Any base to any mobile, any mobile to any base and any mobile to any mobile. 460.425/465.425 is the main channel, 460.100 serves as a secondary channel.

DENVER POLICE DEPARTMENT

BASE	MOBILE	TYPE	AREA	USE	CHANNEL
453.100	458.100	PL FB FB2	Northwest	District 1	1
453.450	458.450	PP FB FB2	Northeast	District 2	2
453.775	458.775	PL FB FB2	Southeast	District 3	3
453.975	458.975	PL FB FB2	Southwest	District 4	4
453.600	458.600	PL FB FB2	City Wide	Clearances	5 TACTICAL
453.700	458.700	PP FB FB2	City Wide	Survellience	← "7"?
453.500	458.500	PP FB FB2	Airport	Airport Detail	
453.350	458.350	PP FB FB2	City Wide	Intelligence Bureau	6
460.425	465.425	PP FB MO	City Wide	CLEER	
460.100	460.100	PP FB MO	City Wide	CLEER	
453.900	458.900	PL FB FB2	City Wide	Mobile Telephones	8?
159.210	156.690	PP FB FB2	City Wide	Old Channel 1, used by units (mostly non-police) not yet converted to UHF	
158.910	155.550	PP FB FB2	City Wide	Sheriff's Department	

AURORA POLICE DEPARTMENT

453.325	458.325	PL FB FB2	1	Dispatch, operations
453.425	458.425	PL FB FB2	2	Clearances, reports, complaint nos.
453.725	458.725	PL FB FB2	3	Animal Wardens, Chit-chat
453.800	458.800	PL FB FB2	4	Detectives
453.800	453.800	PL FB MO	5	Survellience

The Westminster Police Department appears to be using 453.475/458.475 instead of the 460.200/465.200 listed.

The Larimer County Sheriff's frequencies are 154.710 repeater, 155.130 mobile. The frequency lists (including the FCC records) show just the opposite.

OREGON

GEORGE (OR-001) sends in a brand spanking new list of Oregon State Police frequencies, stations, divisions and call signs...

OREGON STATE POLICE

Division 1	Headquarters (Milwaukie)		
Station 11	Milwaukie	KOA-745	42.92
Station 11-A	Government Camp	KOB-202	42.92
Station 13	Astoria	KOA-418	42.88
Station 14	McMinnville	KON-349	42.88
Station 15	Saint Helens	KWQ-651	42.88
Station 17	Tillamook	KOB-877	42.88
Station 18	Beaverton	KON-349	42.88
Station 19	Portland-Multnomah	KOA-745	42.92
Division 2	Headquarters (Salem)		
Station 21	Salem	KOA-598	42.94
Station 21-A	Mill City	KSZ-324	42.94
Station 21-B	Dallas	KYO-267	42.94
Station 22	Lincoln City	KRA-530	42.94
Station 23	Albany	KDQ-231	42.90
Station 23-A	Sweet Home	KUU-311	42.94
Station 23-B	Santiam Junction	KQU-299	42.94
Station 25	Eugene	KOA-693	42.90
Station 25-A	Oakridge	KVG-920	42.82
Station 25-B	Blue River	KZB-343	42.90

Public Safety - West (continued)

Station 26	Newport	KOA-315	42.94
Station 26-A	Florence	KJW-724	42.94
Station 27	Corvallis	KDQ-231	42.94
Station 28	Cottage Grove	KUY-513	42.90
Division 3	Headquarters (Medford)		
Station 31	Medford	KBG-513	42.82
Station 33	Coos Bay/Coquille	KOB-307	42.82
Station 34	Gold Beach	KEP-653	42.82
Station 34-A	Brookings	KTO-415	42.82
Station 35	Grants Pass	KOA-513	42.82
Station 37	Roseburg	KOB-310	42.82
Station 38	Reedsport	KVG-919	42.82
Division 4	Headquarters (Baker)		
Station 41	Baker	KOA-383	42.86
Station 41-A	John Day-Highway Department	KOB-309	42.86
Station 41-C	John Day-OSP	KOB-309	42.86
Station 43	Arlington	KOA-381	42.86
Station 45	Alkali Lake	KYO-327	42.86
Station 46	La Grande	KOA-744	42.86
Station 46-A	Enterprise	KON-823	42.86
Station 47	Onterio	KOA-384	42.86
Station 47-A	Burns	KOB-311	42.86
Station 47-B	Basque	KYO-328	42.86
Station 48	Pendleton	KOA-382	42.86
Station 48-A	Milton-Freewater	KRA-531	42.86
Station 49	Hermiston	KOA-382	42.86
Division 5	Headquarters (Bend)		
Station 51	Bend	KON-896	42.56
Station 51-A	Madras	KVJ-735	42.56
Station 51-B	Prineville	KOL-354	42.56
Station 51-C	Warm Springs	KOB-728	42.92
Station 53	The Dalles	KOA-293	42.92
Station 53-A	Hood River	KVN-611	42.56
Station 55	Salem (Headquarters)	KOA-598	42.94
Station 56	Klamath Falls	KOB-308	42.56
Station 56-A	Gilchrist	KOL-482	42.56
Station 56-B	Lakeview	KJE-229	42.56
Station 56-C	Odell Lake	KOA-296	42.56
Station 57	Eugene-Civil Defense	KOA-693	42.90

Oregon State Police

(F-1)	42.88	Patrol Dispatch	(Division 1)	Northwest
(F-2)	42.94	Patrol Dispatch	(Division 2)	West Central
(F-3)	42.82	Patrol Dispatch	(Division 3)	Southwest
(F-4)	42.86	Patrol Dispatch	(Division 4)	East
(F-5)	42.92	Aux Dispatch	(Division 1)	Portland Area
(F-6)	42.90	Aux Dispatch	(Division 2)	Salem-Eugene
(F-7)	42.56	Patrol Dispatch	(Division 5)	Central
	154.935	Hand Held Portables		Portland Area
	42.78	Administration		
	42.44	Licensed but not in use at this time		

From BOB (WA-007)

		PORTLAND FIRE BUREAU	
F-1	154.010	Fire Dispatch	
F-2	154.250	Fire Operations	
F-3	154.145	Fire Operations	KOB-647
	154.280	Mutual Aid Fire Net	

Public Safety - West (continued)

P.F.B. Fire Code

100 Series-Executive
100-Fire Commissioner
100A-Admin. Assistant
101-Bureau Chief
102-Asst. Chief on Duty
102A-A Shift off Duty Asst. Chief
102B-B Shift off Duty Asst. Chief
102C-C Shift off Duty Asst. Chief
103- Asst. Chief-Exec. Officer
104-Chief Training Officer
105-Public Education Officer
106-Staff Officer
107-Asst. Training Officer
108-Fire Chief's Office
109-Special Assignment

200 Series-Fire Alarm
201-Supt. Fire Alarm
202-Asst. Supt. Fire Alarm
203-Lineman Forman
204-Electrician
205-Lineman
206-Lineman
207-Lineman
208-Lineman
210-Chief Alarm Operator

300 Series-Fire Prevention
301-Fire Marshall
302-Chief Investigator
303-Chief Inspector
304-Inspector
305-Inspector (oil burners)
306-Photographer
307-Fire Investigator
308-Inspector (institutions)
309-
310-Inspector (schools)
321-Sr. Inspector (west side)
322-Sr. Inspector (east side)

400 Series-Mechanical
401-Supt. of Apparatus
402-Auto Mechanic
403-Lubrication Car

500 Series-Maintenance
501-Supt. of Buildings
502-Carpenters
503-Plumbers
504-Lead Plumbers

600 Series-Communications Vans
601-District 1
602-District 2
603-District 3
604-Reserve Van
605-District 4

Coded Calls
345-Send Ambulance
347-Send Coroner
350-Death or Serious Injury
Code 3-Emergency, Use Lights and Siren

Fire Alarm Box Locations
1000 Series-Southwest
2000 Series-Northwest
3000 Series-Burnside to Killingsworth
4000 Series-Burnside to Powell
5000 Series-Powell to City Limits
6000 Series-North
7000 Series-Swan Island

Well...that's it for February. Rather short wasn't it? Come on get those cards and letters in so your column can grow even bigger and better!!!

PUBLIC SAFETY - WEST, SOUTHERN CALIFORNIA - Eric Christensen, Editor

From SKIP (CA-SD-002):

New San Diego Police Department beat system numbering-total change

All regular units are now numbered according to the substation that they work out of. There are now seven substations.

100 units	Northern Command	F2	(M.Bay, P.B., La Jolla, N. Clairmont)
200 units	Northeastern Command	F3	(Mira Mesa & North)
300 units	Eastern Command	F3	(Tierra Santa & East San Diego)
400 units	Southeastern Command	F1	(Southeast San Diego)
500 units	Central Command	F4	(Downtown)
600 units	Western Command	F2	(Linda Vista, Ocean Beach)
700 units	Southern Command	F1	(San Ysidro)
800 units	Staff Services & some Traffic units		
900 units	City-wide investigators		
1-90 units	Chiefs, Inspectors, VIPs		

San Diego Police Department-Radio System

F1	158.73	R	Southeast (400) & Southern (700)			Dispatch
F2	158.97	R	Northern (100) & Western (600)			Dispatch
F3	159.09	R	Northeast (200) & East (300)			Dispatch
F4	159.045	R	Central (500)			Dispatch
F5	158.895	R	Special Use			(Spare Tac Channel)
F6	154.92	S	CLEMARS			CLEMARS
F7	154.785	S	Inquiry			Inquiry
F8	155.685	S	Tac One			Tac One

San Diego Police Department-New Unit Lettering Suffixes

"A" Police Agent	"P" 1 man ambulance	"T" Traffic investigator
"S" Sergeant	"H" 2 man ambulance	"V" School task force
"L" Lieutenent	"J" 1 man patrol	"W" 1 man extra patrol
"C" Captain	"K" 2 man patrol	"X" 2 man extra patrol
"O" C.S.O.	"M" Motorcycle	"Y" 1 man C-squad patrol
"D" Detective	"P" Parking control	"Z" 2 man C-squad patrol
"E" Traffic enforce	"R" Reserve	

Note: See January 1980 issue of RCMA Newsletter for SDPD disposition clearance codes used in conjunction with the SDPD C.A.D.S. system.

Note: There is still some confusion over channel number 5, which used to be the detective frequency (154.725 MHz.) The detective channel is now supposed to be Freq 9, but not all cars have changed, so a unit sent to "F5" may show up on either the Repeater Channel 5 or the detective channel (causing much confusion to the units involved, who usually don't know what's wrong!) Freq 5 may become a dispatch channel (probably Northeast) if budget for more dispatchers can be found.

NORTHERN COMMAND

Area commander	100C
1st Watch Unit Commander	101L
2nd Watch " "	102L
3rd Watch " "	103L
Special Detail Command	104L
Sergeants Area I (MB,PB,La Jolla)	
Sergeant	110S
Beats	111-114
Agent	110A
Sergeants Area II (Clairmont)	
Sergeant	120S
Beats	121-124
Agent	120A
Detective unit Commander	105L
Sergeants District(Crimes against Persons)	
Sergeant	160S
Detectives	161-169
Sergeants District(Crimes against Property)	
Sergeant	170S
Detectives	171-179
Sergeants District(Juvenile Crime)	
Sergeant	180S
Detectives	181-189

Public Safety - West (continued)

C-Squad Sergeants Squad

Sergeant	140S
Units in 110S area	115-119
Units in 120S area	125-129

Units Working Special Details

Units	141-149

NOTE: All Crime against Persons, Property, & Juvinile Cri
units use the same unit numbering system, so all "7
units are Property units, (170, 270, 370, etc), sam
for all investigative units assigned to a single su

Other Substations use the same system

NORTHEASTERN COMMAND

Area I Sgt.	210 S
Units	211-214
Agent	210 A

EASTERN COMMAND

Area I Sgt.	310 S
Units	311-314
Agent	310 A
Area 2 Sgt.	320 S
Units	321-325
Agent	320 A
Area 3 Sgt.	330 S
Units	331-335
Agent	330 A

SOUTHEASTERN COMMAND

Area 1 Sgt.	410 S
Units	411-414
Agent	410 A
Area 2 Sgt.	420 S
Units	421-424
Agent	420 A

CENTRAL COMMAND

Area 1 Sgt.	510 S
Units	511-514
Agent	510 A
Area 2 Sgt.	520 S
Units	521-524
Agent	520 A
Area 3 Sgt.	530 S
Units	531-535
Agent	530 A

WESTERN COMMAND

Area 1 Sgt.	610 S
Units	611-614
Agent	610 A
Area 2 Sgt.	620 S
Units	621-624
Agent	620 A

SOUTHERN COMMAND

Area 1 Sgt.	710 S
Units	711-715
Agent	710 A

****

From CHRIS (CA-OR-050):

The beat numbers for the "CAPISTRANO" office of the C.H.P. are as follows: (Frequency: "Purple" 42.40 B/ 42.16 M. "Santa Ana Dispatch"

113-1	South Laguna/Niguel/Laguna Hills	113-26	El Toro Road
113-2	El Toro/Trabuco Canyon	113-27	Trabuco Rd & Ali
113-3	Mission Viejo	113-30	Marguerite Pkwy
113-4	Dana Point/Capistrano Beach	113-40, 41	Ortega H
113-10, 11, 12	Pacific Coast Highway	113-42	Crown Valley Pkw
113-13	Laguna Canyon Road	113-55, 56, 57	I-5 FWY

Note: Like all other C.H.P. offices, not all beats are assigned a c every day. On most days, the Capistrano office has Units 11, 26, 55, 56, and 57 working; and they cover the rest of the areas as needed.

From CRAIG (CA-VE-011):

The Los Angeles City Fire Department will be going to a duplex/repeat system on all its UHF channels as of Jan 1, 1980. VHF-Low channels wi remain the same. Freq 5 & 6 will go duplex for command channels in Ju

Public Safety - West (continued)

Day shift: 21810 Sgt. Patrol units: 21811, 812, 813, 814, etc.
Eve.shift: 21820 Sgt. Patrol units: 21821, 822, 823, 824, etc.
A.M.shift: 21830 Sgt. Patrol units: 21831, 832, 833, 834, etc.

Patrol area divisions: La Habra Blvd./Walnut Street.

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From JIM (CA-LA-094):

Buena Park Police Unit Identifiers: Frequency: 460.250 R "Station 23"

23000-23009	Administration	23500	Services
23010-23099	Patrol, Cover, CSI	23600	Vice & Narcotics
23100-23200	Patrol Supervisors	23700	Traffic
23300	Special Problems Unit	23800	Un-keyed units
23400	Detectives	23900	Special Enforcement Detail

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From ERIC (CA-LA-045):

SHERIFF'S DEPARTMENT-County of Orange "Station 18" 460.425 MHz (R)

18000+	Administrative	"A"	2 Man Patrol Car
18100-160	Midnight Patrol	"D"	2 Man Extra Car
18200-260	Day Shift Patrol	"E"	1 Man Extra Car
18300-360	Evening Partol	"M"	Motorcyle or Mounted
18161-189	Sunset Harbor	61-69	Patrol Boats
18261-289	Newport Harbor	71-79	Land Vehicles
18361-389	Dana Pt. Harbor	81-89	Fire Boats
18400-999	Support Services	18290-296	Search & Rescue

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Corrections to C.H.P. Frequency listing in December 1979 R.C.M.A. Newsletter.

"HAYWARD" units now reported to be on the new "TAN" frequency, leaving the old "GOLD" frequency. (Per info from "OAKLAND" area C.H.P. Communications Center. (Same info received from JOHN (IL-012)).

"YREKA" & "Mt. Shasta" units reported to be on the "PURPLE" frequency, a switch from the "BLUE" frequency. From JOHN (IL-012).

CURRIOUS & QUESTIONABLE & UNCONFIRMED INFORMATION DEPARTMENT: by ERIC (CA-LA-(

A Los Angeles County Deputy Sheriff informed me that he has been told by certain persons at the L.A.S.O.'s S.R.C. (Radio Center) that the L.A.S.O. may be contemplating going from 39 MHz system to VHF Hi-Band (NOT 470 MHz UHF for all communications!!! Apparently, experimental use of 470 MHz system for patrol at Lakewood Sheriff Station is leaving something to be desired. (He also told me that several Deputies @ East L.A. station use low band pocket scanners to monitor their dispatcher when they are out of their patrol vehicles. (Apparently, their VHF extenders need improvement.) He also told me that the East L.A. station complaint desk has three Bearcat scanners with which to monitor neighboring agencies!!! Any comments?

NEXT MONTH: Fire Department numbering systems for several Orange County fire departments (thanks to DWAYNE ERB, CA-OR-___) How about some similar info for San Bernardino, Riverside, L.A. and everywhere else?! Thanks to all who have contributed to the Southern California Public Safety section. (EJC-CALA045)

F1 506.3125 Division 1 unit to unit
F2 506.5375 Division 2 & 3 "
F3 506.9125 Rescue ambulances
F4 507.1375 Not presently being
F5 506.6375 Command
F6 507.0125 Command

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Craig also sent in a nice list of Ventura County Fire Stations:

Freq 1: 154.01 KMB552 South Mountain "Ventura"
Freq 2: 154.325 KRC739 Red Mountain "Ventura"

11	Fillmore	33	Lake Sherwood
12	Santa Paula	34	Thousand Oaks (north)
13	Piru	35	Newbury Park
14	Sulphur Mtn Springs	41	Simi Valley
15	Saticoy	42	Moorpark
16	Lockwood Valley	43	Santa Susanna Knolls
21	Ojai	45	Simi Valley (west)
22	Meiners Oaks	46	Simi Valley (north)
23	Oak View	50	Camarillo Airport
24	Ventura	51	Oxnard
25	Seacliff	53	Port Hueneme
30	Thousand Oaks	54	Camarillo
31	Westlake	55	Camarillo
32	Newbury Park	56	Malibu

From CRAIG (CA-VE-011):

SHERIFF'S DEPARTMENT-County of Ventura Unit Numbering System

Freq 1: 159.21 Dispatch
Freq 2: 158.73 Car to Car

KMH693 South Mountain "Station One"
KMG405 Red Mountain "Station One"
KQS768 E. Valley Stn. "Station Ten"

1 Administrative
2 Field Supervisors
3 West County Units
4 East County Units
5 Detectives
6 Transportation
7 Not assigned
8 City of Camarillo
9 City of Thousand Oaks

3 West County area
- 3A Meiners Oaks
- 3B Piru
- 3C Oxnard plains/beaches
- 3D Pt. Mugu, Malibu, Camarillo u

4 East County area
- 4E1 Newbury Park unincorporated
- 4E2 Lake Sherwood, Agoura, Bell C
- 4F1 Moorpark
- 4F2 Santa Susanna Knolls, Box Can
- 4R1 County Reserve Unit
- 4M Dirt Motorcycle Unit

8 City of Camarillo
- 8A Camarillo (north)
- 8B Camarillo (central)
- 8C Camarillo (south)
- 8T Traffic

NOTE: Any "S" unit is a sergeant: 3S, 4S, or 5S.

9 City of Thousand Oaks
- 9A Thousand Oaks (north)
- 9B Thousand Oaks (central)
- 9C Newbury Park (incorporated)
- 9D Thousand Oaks, Westlake
- 9M Motorcycle/Traffic
- 9T Traffic
- 9R1 Thousand Oaks 'Rover'

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From ERIC (CA-LA-045):

POLICE DEPARTMENT-City of La Habra, California

Dispatch frequency: 460.475 R "Station 21"

21500 Chief of Police	21800+ Patrol Division
21600+ Detective Division units	21900+ Police Reserves
21700+ Police Cadets	21879 Animal Control

Patrol Division: Watch Commander- 21801

Business, Etc.

Chuck Gysi, Editor

This column is for reporting frequency and radio system information for the following varied services: business, forest products, petroleum industry, special industrial, manufacturers, news media (behind-the-scenes radio, TV & newspaper), motion picture industry, security (private patrol, detective agencies, campus security & police, amusement park & stadium security, shopping center & mall security, plant/business/ hotel security, etc.), General Mobile Radio Service (GMRS), mobile phone/RCC & paging, trucking firms, bus lines, taxi cabs, tow trucks, utility companies (private & municipal water, power, electric, gas, telephone, etc.), and all school & college related frequencies. Send information and questions pertaining to the radio services covered in this column to: Chuck Gysi, P.O. Box 216, Willow Grove, PA 19090.

The input to this column has been tremendous! I want to thank everyone for all the lists, information and frequencies that you are sending. I'm getting an awful lot of information and will try to get in as much interesting material as possible. Because of my deadlines that I have to meet to send my column to be prepared for printing here, often information that is sent may not be used for up to two months. I send my column in more than a month before you read it here so if you are looking for an item you sent in, be aware that it may not appear for two months. Another thing--be sure to include your membership number with any information you send in. If you are a new member and don't have a number yet, just say so. Your membership number can be found above your name on the mailing label on the back of this newsletter. I just want everyone to get the credit that is due them. I also have received a lot of anonymous contributions from members. I presume that some wish to remain anonymous because they are submitting information on radio systems where they work. This is quite understandable. Just so I'm on the record, I will honor requests for anonymousity but for my own information only, I would like to know who you are in case I have any questions regarding the information you submit. I will not reveal who you are to anybody (the First Amendment guarantees that). One other thing--many of you are sending in business band freqs but are not indicating what the freq is used for. Please, state whether the freq is used for security, shipping, service trucks or whatever. It lets us know what we are listening to. Without further comment, here we go.

News Media/Film

MONITORING BALTIMORE-WASHINGTON TRAFFIC REPORTS

Baltimore and Washington are only about 35 miles apart and the major highways between them, around them and in them often get very congested, as most large cities do. Last month I visited the two cities to do some monitoring and found a lot of traffic reports not only on the broadcast relay freqs, but also the business band.

Both Baltimore and Washington are served by a traffic reporting service called Metro Traffic Control. This service is subscribed to by radio stations. Metro Traffic calls the radio stations and gives live reports by landline. For each report, Metro tapes a report from one mobile unit over the two-way radio and plays back the tape on the radio station when broadcasting. The announcer at the control center also provides other reports filed by the mobile units. No helicopters are used by their service, just mobile units on the highway. In Baltimore, Metro Traffic uses 463.85 (WYB 929),

and in Washington, 496.1625 is used. A full-page ad in the January issue of Baltimore Magazine by Metro shows 11 radio stations under contract in Baltimore and I imagine about the same number in Washington.

In Baltimore, there is apparently only one traffic helicopter, that of WFBR-AM. It operates on 166.25 as "Sky Patrol 13" and base IDs as KLS-700. Washington seems to be served by two helicopters. Metromedia's WASH-FM has a helicopter that operates on 450.25 and provides broadcasts four times an hour. Another traffic helicopter operates on 161.70. I didn't start copying this copter until I was back in Baltimore, but it was a Washington station's copter. It was breaking up too much for me to copy the call sign, but Joe (MD-015) advises me that this is WMAL-AM's traffic copter.

I also monitored some news media freqs while there. NBC seems to use 170.15 for both network and local operations in Washington. I also copied the following freqs but am unable to figure out who they are at this time. Any help in IDing them would be appreciated. In Washington--450.0875, 450.3875 (IDed as "294"). In Baltimore--161.67 (ID as "664"), 161.76 (ID as KTX 683), and 450.85 (ID as "665").

From JOE (MD-015): Washington News Media
161.670 WRC-TV Ch. 4 (NBC) dispatch
161.730 WTTG-TV Ch. 5 (Metromedia)
455.2125 WMAL-AM news
455.5500 WJLA-TV Ch. 7 (ABC) dispatch and cues
455.6500 WRC-TV Ch. 4 (NBC) cues

SHADOW TRAFFIC UPDATE

We're working on trying to find Shadow Traffic's freq for Chicago. I've got a couple of members trying to get on top of this now and hopefully we'll be able to report on this soon. Last month, I detailed their operations in Philadelphia on traffic reporting and stated that they are operating on 462.55 in the GMRS band in Philly and New York. Philly call is KAC 5235 and New York call is KAC 5716. I suspect that Chicago Shadow might be using GMRS also. Mike (IL-014) tells me that he peeked in their office on the 94th floor of the John Hancock Center and saw a UHF repeater and what looked like UHF walkies. Broadcasting magazine (Nov. 18) stated that Shadow expects to have 40-45 stations subscribing to their service in the Big Apple and are serving 20 stations in Philly and 29 radio stations in Chicago. The general manager of New York Shadow is Fred Feldman, formerly WOR-AM's traffic copter reporter. Mike (NY-058) seems to indicate that Shadow is based in the Empire State Building in NYC.

KABC-TV Ch. 7 RADIO SYSTEM/LOS ANGELES
From Walt (CA-ØR-129):
450.1500 KQA 845 news dispatch
450.3125 KQA 846 engineering
"Desk" or "Base"--news dispatcher
"ENG Control"--minicam studio engineering
"Mount Wilson"--transmitter site
"Studio 52"--news show director
"Master Control"--central studio control console
two-digit unit numbers--news/film units
"Minicam" and number--ENG unit (i.e. "Minicam 13")
*Repeater locations: Palos Verdes (primary), Santiago, Lukens, Mount Wilson, KJOI-FM.

Business, Etc. (continued)

Terms common to most broadcast relay stations:
ENG--Electronic News Gathering (minicams)
Thomas--Thomas Bros. map guide to LA and SF

The Mountain--Mount Wilson, above Los Angeles
B-Roll--film
Channel 1, 2, 3, etc.--Microwave feed channel
Feed--Any microwave transmission to the studio
Sig Alert--Freeway traffic jam alert
The Center--World Trade Center, New York, transmitter center
Time Base Corrector--synchronizes mini-cam signal with studio signal for live broadcast
Synch Bars--Interference from 120 VAC sources (60 cycles)

LOS ANGELES AREA FILM FREQS
From Mike (CA-OR-???)

157.680	Twentieth Century Fox
	Walt Disney Productions
	MGM
173.275	Columbia Pictures
30.84	Desilu Productions
152.990	MGM
152.930	Paramount
	Warner Bros.
463.600	Metromedia

From ED (CT-001): Re: your inquiry in the Nov. newsletter about the traffic reports on 161.70 in the New York and Connecticut area. That is a Cessna 172 piloted by Morgan Kaolian, doing daily traffic reports for radio station WICC (AM 600) in Bridgeport, CT. The call sign is KTB 788 airmobile, base on the same freq in Bridgeport. He also gives fishing reports on weekends during the summer. He's a great guy; I've flown with him several times during his broadcasts.

From TONY (NJ-005): WCBS-TV Channel 2 News helicopter is operating on 450.0500 (Ch.1) and 450.2875 (Ch. 2) in New York. These are generally ENG channels for WCBS-TV.

GMRS

From JERRY (PA-036): Delaware County constables are using 462.575. (Delaware County is outside of Philadelphia.)

Business

During my recent jaunt to Washington, I noticed that Federal Express is using 800 MHz there also. I recently reported that Federal had switched from T-band to 800 MHz in Philadelphia and it seems that they are switching over to 800 MHz in most areas. Now if we only had 800 MHz receivers... I imagine that the manufacturers are waiting for more public safety agencies to make to switch to 800 MHz before they start producing 800-MHz scanners, since most scanner owners are interested in public safety agencies rather than some of the more exciting activities that can be found on business band.

Received an interesting brochure in the mail from 2-Tel Interconnect Systems Co. in Texas. They have a device that two-way radio users may purchase to interconnect phone

lines with their radio system. The system can be used to place telephone calls from mobile radio units by using a touch-tone pad encoder. The base unit can also be set up so that all incoming telephone calls to the business' main telephone go out over the radio and can be answered by a mobile unit, such as night, when there may not be a dispatcher. The system is compatible with all radio systems and can be used by repeaters, control stations, base, mobile and even simplex systems. The company claims that more than 800 of their systems are in operation at the present time.

DETROIT AREA BUSINESS FREQS
From Mike (MI-016):

153.05 Ford Motor Co.--some paging but mostly voice to keep track of millwrights, etc. in plants.
153.05 Great Lakes Steel--used by supervisors, voice only.
153.08 General Motors Tech Center--used at tech center where new cars are developed and also at the Milford test track.
153.08 Great Lakes Steel--railroad
153.29 Union Carbide Corp.--paging and voice
153.32 Ford Motor Co.-security

Motor Carrier

NEW SAMTRANS RADIO SYSTEM
From Bay Area Scanners Club "Bay Scan"

The new SAMTRANS (I believe this is the San Mateo Transportation Authority which is just south of San Francisco) communications system will be going into operation soon. This new system is designed to interface with an in-house computer at SAMTRANS. Via digital control heads, passenger information such as number of passengers on board, and by category, i.e. senior citizens, children, adults, half-fare, etc. is fed into the computer from each unit. The system will provide county-wide coverage and may be piggybacked on to the existing county system. Both maintenance and operations will be on these new freqs. All SAMTRANS management and maintenance personnel will have portables. It is not known what the old channel, 484.4625 will be used for after conversion. The new freqs are 483.1875 (ch.1), 483.2375 (ch.2), 483.2625 (ch.3), and 483.2875 (ch.4).

Mobile Phone/RCC

SCRAMBLED-UP PHONE CALLS
From John (CA-SD-009):

John sent me an interesting letter on the subject of scrambling RCC mobile phone calls. John is a mobile phone subscriber with Imperial Communications Corp. in San Diego. Imperial has sent out letters to its subscribers seeking an indication of how many manual mobile phone users would be interested in scrambling calls. The letter states that the operator would be told by the subscriber after placing the call to scramble the call. Both the base and the mobile would then be in the scramble mode until the end of the conversation when the user would switch back to the clear mode to sign off. Apparently a company is offering the equipment to Imperial on a trial basis. John says that

chief engineer at Imperial, a friend of his, says that the scrambling will be probably of the inversion type. John says that when asked if he was interested in such a system, "You may imagine my reply!" I guess we had it coming sooner or later.

MOBILE PHONE AND RCC DIRECTORIES

Yup, there is such a thing. Both the Bell System and an RCC firm publish directories that list mobile phone systems throughout the United States for those travelling. Since not all the available RCC or mobile phone freqs are used in every city, the directory is consulted to see what channels are available in a given city and in cases of RCC, what firm handles RCC calls in the city. John (CA-SD-009) says that the telephone companies' directory is usually available free from their mobile repair service. Rod (VA-012) advises that the RCC directory is available from Telocator of America, Suite 1020 North, 1800 M Street, NW, Washington, DC 20036 or (202) 659-6446. John says that the RCC guide will cost about $3.50 or so from a local RCC business office. Best bet is to call or write first.

Utility

PART I: LA CITY WATER AND POWER RADIO SYSTEM

An anonymous member sent me a booklet entitled "Radio Operations" for the City of Los Angeles Department of Water and Power. This 16-page booklet details all the radio systems of LA's water and power operations including frequencies, station locations and usage of channels. Over the next several months, I intend to reproduce here this booklet in parts. It will probably take until the end of this year to include everything. I will abbreviate certain portions of the booklet when possible. This month, I will list the frequencies used by the department so readers can become acquainted with the system.

Freq	Code	Channel	Primary Use
47.76	P	Purple	Transmission line communications
47.80	W	White	Randsburg Peak relay control
47.86	Y	Yellow	San Fernando Vly power operations
47.96	S	Silver	San Fernando Vly water operations
48.18	B	Blue	Los Angeles water operations
48.30	K	Black	walkie-talkie operations
48.36	G	Green	West LA power operations
48.42	R	Red	Los Angeles power operations
48.52	O	Orange	Mojave area operations
158.19	3	Hi-Band	Owens Valley operations
173.25	4	Various	walkie-talkie operations, Owens Valley mobile relay control
173.35	5	Various	walkie-talkie operations
451.125	6	Various	LA, General Office Building and Owens Valley paging operations
456.125	7	Various	Lookout Mountain (LA), Mazourka Peak (Owens Valley) relay control
471.3125	8	Various	Tank Farm and Sylmar operations
474.3125	9	Various	Control of Tank Farm and Sylmar relays

From CHRIS (CA-OR-050):

For Mike (CA-RI-011), the traffic he heard (in response to question in December newsletter) on 48.12 belongs to the Southern California Edison Co. The traffic on 153.575 belongs to the San Diego Gas & Electric Co. The transmitter for KUE 337 is on Mt. Palomar. They use this freq for their gas operations. Their electric operations can be found on 153.50. The traffic on 153.53 he heard was probably Southern California Gas Co. They do use that freq in some parts of Southern Cal. Also, the Southern California Gas Co.'s operations in southern Orange County are on 153.455 and are dispatched from Anaheim. The following is a list of codes used by the San Diego Gas & Electric Co.:

800	Message received	809	Call by telephone
801	Routine assignment	810	Stand by
802	Urgent assignment	811	In service
803	Any assignments?	812	Out of service
804	Nothing for you	813	Job progress
805	Cancel last assignment	814	Too weak to read
806	What is your location?		
807	Repeat message	888	Emergency code

Chris is also interested in the radio code for the Southern California Edison Co. If anyone has a copy of such, please forward a copy to me for publication in this column.

From TOM (CA-LA-184):

In answer to Mike's (CA-RI-011) request for utility information in December's newsletter:

153.53 is Southern California Gas Co. General Telephone Co. of California uses these frequencies for repair and installation: 158.000, 451.325, 451.400, 451.450, and 451.500. (Editor's note: The 158.000 freq is smack in the middle of two mobile phone repeater input freqs. Can anyone verify this?) Also, 153.65 is Pasadena Light and Water Dept. and 158.13 is Southern California Edison Co.

Security

KNOTT'S BERRY FARM SYSTEM/BUENA PARK, CA

From Robert (CA-OR-026):

——— Frequencies in use:

151.655	KML 654	Security "Station K"
154.600	KZE 878	Construction/Maintenance "Station K"
154.570		Rides
158.460		Pagers (tone and voice)
464.550	KON 886	Entertainment/Technical "Office"
464.825		Publicity

——— Unit numbers for security channel:

OM	Operations manager
MED-1	First aid unit
01	Vehicle patrol-west
02	Vehicle patrol-east
03	Vehicle patrol-rove
04	Parking patrol
05	Security manager
06	Security director

Business, Etc. (continued)

07 Parking supervisor
07A Assistant parking supervisor
08 Lieutenant
09 Sergeant
10 Training officer
11-18 Front end officers
19 Lead sweeper
20-29 Ghost Town officers
30-39 Fiesta Village officers
40-49 North Roaring '20s officers
50-59 South Roaring '20s officers
60-69 Undercover officers
70 Parking Lead No. 1
70A Parking Lead No. 2
71 Parking booth
72 Parking control-north lot
73 Parking control-east lot
74 Parking control-west lot
75 Parking control-north Lagoon lot
76 Parking control-south Lagoon lot
77 Parking control-Alligator lot
78 Parking control-school lot
79 Parking control-Cresent lot

——Codes used by security:
Standard Orange County Police codes plus:
101 Ride is down
102 Ride is up
970 Found property
976 Car problem
Other three-digit numbers from 100-599 are telephone extensio

From SCOTT (GA-005):
I just found out that the Cumberland Mall in Cobb County, Georgia, is on the 800-MHz band now. They only have one mobile, but they have more than a dozen handhelds for use by security, maintenance and the information booth.

From JIM (NJ-019):
463.850 AT&T HQ, Basking Ridge, NJ security R
463.900 AT&T HQ, Basking Ridge, NJ maintenance R

School

SAN DIEGO STATE UNIVERSITY DEPT. OF PUBLIC SAFETY SYSTEM

From Jeff (CA-OR-012):
——Freq - 153.74 Call sign - KCS 530
Unit numbering (all shifts):
300s Supervisors
400s Investigators
500s Public Safety officers
600s Parking control units
800s Student Patrol (students on foot with handhelds)
The shifts are 0630-1430, 1430-2230 and 2230-0630. Each car is equipped with a two-way radio on 153.74 and 154.92 (CLEMA Each car also has a scanner to listen to San Diego City poli The jurisdiction of the campus police includes the campus an all points within a one-mile radius. They use the same radi codes as San Diego City police.

Freak Freqs

MAJOR LEAGE SPORTS FREQUENCIES
From Karl (CA-OR-022):

151.625	KA 6977	New England Patriots Football (Foxboro, MA)
151.685	KW 9331	Cleveland Browns Inc. (Cleveland, OH)
151.715	KX 2236	Baltimore Football Club Inc. (Baltimore, MD)
151.775	KY 2090	San Francisco 49ers (San Francisco, CA)
154.570	KW 9375	New York Jets Football Club (New York, NY)
	KY 2356	San Diego Chargers Football (San Diego, CA)

From CHUCK (PA-005):

151.775	KY 5041	Philadelphia Eagles Football Club (Phila.)
154.570	KP 2841	Philadelphia National Leage Club (Phillies)

(Editor's note: The above frequencies were obtained off of FCC licensee files. Some of the freqs may be actually used for on-the-field action, but others, such as the Phillies freq, may possibly be used for security at the stadiums. Any additional information is welcomed.)

73,
Chuck

photo department

Send photographs of custom monitor listening posts, unusual or extensive monitor or two-way antenna systems, user station consoles (PD, Fire, Paramedics, etc.) or other monitor/two-way related equipment of interest. Photographs must be 3 x 5 inches or larger, black-and-white with good contrast, sharply focused and attractively composed. Each photo must be accompanied by details and explanations of equipment. Photos will not be returned. If you have questions, write first and please include an SASE.

First, I'd like to thank and compliment those who have sent photos for the column. They are of fine quality and well composed, but not exactly what we're looking for. Now they don't have to be as fancy as my station picture in the November issue, but we're looking for the unique and unusual in home or car installations. If you have something out of the ordinary, send it in. Don't forget that we are also looking for photos of radio installations in Police/Fire Communications Centers, Air Traffic Control Centers, etc. The list is endless. If you get a person in your picture, be sure to get written permission to use that photo, and send that on to me also.

In the next few months, I'll be taking some photos in this area of unique installations and public safety stations to give you an idea of what we are after. But don't let that stop you from sending something! Remember to place a piece of cardboard in the envelope with the photo, and mark the envelope, "Photos, Do Not Bend". While Anaheim has been having postal problems getting this newsletter out, I have been having excellent cooperation and service from the St. Charles Post Office-but if I find my postal box empty, it's only because you didn't send something!

Aircraft

Mark Holmes, Editor

Send private, commercial, firefighting and law enforcement aircraft frequencies of interest in the 108-136 MHz range and frequencies in other bands associated with airports and aircraft plus questions, articles, and tips related to aircraft monitoring to: Mark Holmes, 1601 W. Maplewood, Marion, IL 62959. Please send all military aircraft frequencies and info to the "MILITARY" column.

EDITOR'S COMMENTS

Thanks to Iden Rogers, Edward Kocsan (NJ-9), Richard Bender (PA-22), George DuBois (OR-1) and Karl Pagel (CA-OR-22) for contributing to this months column. Another member sent in information, however he wished to have his name witheld.

Ronald Reagan was in Marion on January 10, arriving in a United Air Lines Boeing 727-22 (N7066U). While it remains to be seen whether all of his future flights will have the same radio call sign, this particular flight was billed as "United 5670".

In the very near future, I am going to purchase microfiche which lists the owners of all aircraft registered in the United States. If there are any members in the United States who are curious about specific aircraft which is either seen at airports or heard in flight, just send me the complete registration number along with a 15¢ stamp. Even though I do not have the material at the present time, members are welcome to begin sending the numbers in.

If there are any members who would be interested in photocopies of the ARINC national and international enroute system maps, please send me a 15¢ stamp.

QUESTIONS/CORRESPONDENCE

Edward Kocsan (NJ-9) wrote and suggested that members who would be interested in obtaining the outdated copies of the Official Airline Guide each month, to get in contact with travel agencies, airline reservation desks or large corporate offices and inquire about obtaining the issues by request and/or token offer.
EDITOR'S NOTE: I personally subscribe to three of their airline schedule books each month, and while I don't recommend them for everyone simply because of the overall books contents, Mr. Kocsan's suggestion is a good one to look into if you are interested in airline flights and schedules as I am.

DEFINITIONS

ABEAM "AMERICAN 115 WAS ABEAM LOUISVILLE AT 1437 ZULU, FLIGHT LEVEL THREE FIVE ZERO, ESTIMATING DALLAS/FT. WORTH AT 1525 ZULU" Most notably heard in regard to ARINC position reports, and means a general position rather than a precise point.

CONTACT APPROACH "REPUBLIC 458 REQUESTING A CONTACT APPROACH" An aircraft on an IFR flight plan, operating clear of the clouds with at least one mile visibility and having received ATC authorization, may deviate from the prescribed instrument approach procedure and proceed to the destination airport by visual reference to the ground.

Aircraft (continued)

KNOT "WESTERN 829 DESCEND AND MAINTAIN ONE ZERO THOUSAND, UPON REACHING ONE ZERO THOUSAND REDUCE AIRSPEED TO 250 KNOTS" Speed equal to one nautical mile per hour. Statuate miles per hour may be attained by multiplying the airspeed by 1.15. In this instance, it would mean multiplying 250 by 1.15 and the speed comes out to 287.5 miles per hour.

NAUTICAL MILE "TEXAS INTERNATIONAL 903 HOUSTON CENTER ROGER, RADAR CONTACT 30 MILES SOUTH OF THE LUFKIN VOR" All distances are measured in nautical miles, which is equal to 6,072 feet. Statuate miles may be attained by multiplying the distance by 1.15. In this instance, it would mean multiplying 30 by 1.15 and the distance comes out to 34.5 statuate miles.

VISUAL APPROACH "OZARK 525 HAS THE AIRPORT IN SIGHT, REQUESTING A VISUAL APPROACH" An aircraft operating on an IFR flight plan in VFR conditions, and having received ATC authorization, may deviate from the prescribed instrument approach procedure and proceed to the airport by visual reference to the ground.

BOOKS AND PUBLICATIONS

The following is a listing of books, or where to obtain books that would be of interest to the aviation/aviation communication enthusiast. I thought a column of this type would be to the benefit of members who are either just getting into aircraft monitoring or giving it some thought. There was no way that every book could be listed on any given month, however if there are any which you feel would be of interest in future months, I will list them separately.

Following the books, are the magazines which are available by subscription. While many are sold at newsstands, the majority are available only by subscription.

Aircraft Components 700 N. Shore Dr. Benton Harbor, MI 49022	Pan Am. Nav. Service 16934 Staticoy St. Van Nuys, CA 91409	Sporty's Pilot Shop Clermont County Airport Batavia, OH 45103

These companies sell books, charts and other aviation related items by mail, request a catalog.

Tab Books Box 40 Blue Ridge Summit, PA 17214	Aviation Book Co. Box 4187 Glendale, CA 91202	Venture Books 2860 Ramona St. Palo Alto, CA 94306

These companies sell books by mail, request their catalog.

AOPA HANDBOOK FOR PILOTS-A handy reference book of aviation knowledge, 450 pages, $10.00

AOPA AIRPORTS U.S.A.-Describes all landing facilities in the United States in detail, 400 pages, $10.00

AOPA, 8315 Wisconsin Avenue, Washington, DC 20014

FLIGHT GUIDE AIRPORT AND FREQUENCY MANUAL-Covers all airports in the 37 states east of the Rockies with airport diagrams and communications frequencies, 620 pages, $22.00 including revisions for one year

FLIGHT GUIDE AIRPORT AND FREQUENCY MANUAL-Covers all airports for the 11 western states with airport diagrams and communications frequencies, 260 pages, $16.00 including revisions for one year

Airguide Publications, 1207 Pine Avenue, Long Beach, CA 90813

GUIDE TO FAA PUBLICATIONS-A complete listing of the FAA's numerous documents on nearly every subject in aviation, free

Aircraft (continued)

FAA, Public Inquiry Center, APA-430, Washington, DC 20591

ADVISORY CIRCULAR CHECKLIST-Catalog of aviation publications free or at cost

Department of Transportation, FAA, Washington, DC 20591

AIRPORT/FACILITY DIRECTORY-Communication frequencies and airport data in 7 volumes, each covering a different geographic region of the U.S. Full U.S. $47.50, One Region $13.75, Each Additional Region $7.00

National Ocean Survey, Distribution Division C-44, Riverdale, MD 20840

BIZ-JET 80 (January-June)-Executive Jet Aircraft throughout the world listed by registration number along with the present owner, 115 pages, $6.95
PROP-JET 80 (January-June)-Turboprop Executive Aircraft throughout the world listed by registration number along with the present owner, $5.20
WORLD AIRLINE FLEETS (Published annually in April)-1,200 airline companies throughout the world detailed by individual registration number, 500 pages, $10.70
WORLD AIRLINE FLEETS MONTHLY-Monthly booklet which updates information for World Airline Fleets and Biz-Jet publications, 75 pages, $30.00

Airline Publications, Harrisburg Int'l Airport, 130 N. 5th Street, Suite 202, Middletown, PA 17057
Airline Publications, 6205 Airport Road, Suite 204, Mississauga, Ontario, Canada LV4 1E3

This company sells unusual books which are available nowhere else, request their catalog.

OAG NORTH AMERICAN EDITION-Lists the airline schedules to every city in North America which has commercial airline service, 1,200-3,000 pages, $76.80 including postage
OAG POCKET FLIGHT GUIDE-Lists the airline schedules to the larger cities in North America, 200-350 pages, $34.22 including postage
OAG AIR CARGO GUIDE-Lists the air cargo schedules for every city in the world which has air cargo service, 400-500 pages, $39.75 including postage

Official Airline Guides, 2000 Clearwater Drive, Oak Brook, IL 60521

WORLD AVIATION DIRECTORY (published twice a year)-U.S. air carriers and their key personnel, air taxi/commercial operators, air ambulances, air express and freight forwarders, aerospace, helicopter and component manufacturers, terminal and non-terminal airports/heliports, FBO's, foreign air carriers, etc., 1,600 pages, each issue $50

Ziff-Davis Publishing Company, One Park Avenue, New York, NY 10016

MAGAZINES

AEROLOG (bi-monthly)
National Aviation Club
Mayflower Hotel
1127 Connecticut Avenue, N.W.
Washington, DC 20036

AEROSPACE (quarterly)
Aerospace Industries
1725 DeSales Street, N.W.
Washington, DC 20036

A/C FLYER (monthly)
BUS. & COMM. AVIATION (monthly)
FLYING (monthly)
Ziff-Davis Publishing Company
One Park Avenue
New York, NY 10016

AIR CARGO MAGAZINE (monthly)
2000 Clearwater Drive
Oak Brook, IL 60521

Aircraft (continued)

AIR LINE PILOT MAGAZINE (monthly)
1625 Massachusetts Avenue, N.W.
Washington, DC 20036

AIR PROGRESS (monthly)
AIRLINE QUARTERLY (quarterly)
7950 Deering Avenue
Canoga Park, CA 91304

AIR TRANSPORT WORLD (monthly)
614 Superior Avenue, West
Cleveland, OH 44113

AOPA PILOT (monthly)
8315 Wisconsin Avenue
Washington, DC 20014

AVIATION MAGAZINE (monthly)
FLIGHT LINE TIMES (weekly)
Box 186
Brookfield, CT 06804

AVIATION NEWS (monthly)
13920 Mt. McClellan Avenue
Reno, NV 89506

GENERAL AVIATION NEWS (monthly)
Box 1094
Snyder, TX 79549

JOURNAL OF ATC (quarterly)
ARBA Building, Suite 409
525 School Street
Washington, DC 20024

PLANE AND PILOT (monthly)
606 Wilshire Boulevard, Suite 100
Santa Monica, CA 90401

PRIVATE PILOT (monthly)
8322 Beverly Boulevard
Santa Monica, CA 90401

ROTOR NEWS (monthly)
1156 15th St., N.W., Suite 610
Washington, DC 20005

ROTOR & WING MAGAZINE (monthly)
Box 1790
Peoria, IL 61656

FREQUENCIES

Karl Pagel (CA-OR-22) reports that Pan American operates on the frequency of 151.685 in Los Angeles; Trans World operates on the frequency of 151.775 in Los Angeles, Ontario, Oakland and San Jose; Western operates on the frequency of 151.805 in Burbank and Palm Springs; Braniff operates on the frequency of 151.865 in Oakland and Air New Zealand operates on the frequency of 151.955 in Los Angeles.

I received the following frequencies from another member: United Air Lines operates on the frequencies of 460.650 and 460.725 at Washington-National Airport; U.S. Air operates on the frequency of 460.775 at Washington-National; Piedmont operates on the frequency of 460.800 at Washington-National; National operates on the frequency of 460.850 at Washington-National; Trans World operates on the frequency of 460.675 at Washington-National and while the frequency of 496.1625 was licensed to Federal Express, and still may be, an organization doing metro area traffic reports is quite active on it now. Washington-Dulles Airport Police operate on the frequency of 169.2625; Washington-Dulles Police/Fire Operations Network operates on the frequency of 165.500; Washington-Dulles Access Highway Network operates on the frequency of 165.7165 and the Washington-Dulles Mobile Lounges operates on the frequency of 169.325 with a Bearcat 220 image on the frequency of 436.725.

CANADA

Send Canadian frequency information, radio system details and other information relating to Canadian monitor radio listening and questions to: Rory B. McEvoy, 12 Castlegrove Blvd., Unit 9, Don Mills, Ontario, M3A 1K8; (416) 449-4170 weekends and 7-11 PM EST/EDT weekdays ex THURS.

No column was received from Roy this Month IBR

International

Richard Stein, Editor

This column is for reporting two-way communications frequencies above 30 MHz, radio system details, monitoring experiences and any other information relating to monitoring in countries other than the United States and Canada. Send to: Richard Stein, 456 Barrymore Pl., North Brunswick, NJ 08902.

NO SCANNING IN U.K.

This ominous statement was the title of a short article which appeared in the July 1978 issue of *CB MAGAZINE*. The article goes on to say- " in Britain the frequencies, modes and techniques of operation of public safety radio systems are 'official secrets' and even to know them or have them written down can result in a prison sentence of several years. Furthermore, it is an offense in Britain- for which people are quite often prosecuted and fined or imprisoned- to listen to any radio transmission except those of broadcast stations and amateurs."

A friend in Britain writes that covering the subject of monitoring in the UK is difficult at best. For one, it is illegal to monitor transmissions of the police and fire departments. For another, monitoring hasn't caught on over there. (Any wonder?) You just can't run out to your friendly neighborhood Radio Shack (called Tandy Stores there) to buy a PSB receiver, or for that matter a CB radio. CB Magazine says that transmissions are illegal on 11 Meters (CB) except for remote control models. People have been fined for listening to overseas CB stations and the use of a scanning monitor on aviation or public service bands is regarded as a serious crime. In spite of this, my friend writes that the English love their airshows and on going to an airshow you will find hundreds of people there *with their aircraft monitors!* There is even an observation platform at London's Heathrow airport where he has seen people *with binoculars and receivers just sitting there and watching the planes come in and take off.*

Police and fire broadcasts have been found on Hi-Band VHF and on his FM radio between 100 and 108 MHz. *(Broadcast FM is allocated to 87.5 to 100MHz. in Region 1, i.e. Europe, USSR in Asia and Africa)* I had an article on this very subject written for *The Sunday New York Times* a number of years ago. I am trying to locate that article and have it reporduced here. I think you will find it very interesting. My friend also believes that the police use UHF but he doesn't have any specific frequencies yet. He states that each constable (officer) carries his own radio and from the length of the antenna it would appear to be high UHF.

It has been brought to my attention that each of the major suppliers of monitor receivers (Electra, Regency and Radio Shack) has a model for export with various frequency receiving capabilities quite different from those domestic (U.S.) models. I am waiting to hear from these companies with more details. I would appreciate hearing from any member with information. Until next month.

Railroads

Ken Fitzgerald, Editor

Send information about railroad frequencies and their uses, radio system details, tips for monitoring railroads, explanations of railroad jargon and related information and questions to: Ken Fitzgerald, P.O. Box 307, Springer, OK 73458.

After sending last month's column in to the newsletter, several more points came to mind that I had neglected to include. I would appreciate it if all members would please list their full names and addresses along with their contributions. Many times I will want to respond to a contributor with additional information or inquiries, but find it difficult without a return address or phone number. I will just use your name and number in the column, or you can remain anonymous if you wish.

I am presently writing February's column shortly after the "new year", and before any of you have had a chance to read my first column in the January issue, but already the contributions have been pouring in. I have been extremely busy this holiday season, and have not had time to organize them all for inclusion in this month's column before deadline. I know this is a lame excuse, but if you will hold off with the lynch mob for awhile, I promise everyone's contributions will be in the March column, and the amount of time that elapses between your sending your contributions and their appearing in the column will be greatly reduced as I get things better organized.

And now, on to the business of railroads. The primary allocations of frequencies to railroad radio service are governed by both the F.C.C. and the Association of American Railroads(A.A.R.). These assignments run from 160.215 to 161.565 on the VHF high band, and from 452.325 to 452.950 on UHF(along with the corresponding 457 mhz frequencies). Channels are available on other parts of the band for special applications, but are rarely used. The UHF channels are mostly shared with motor carriers, and are usually used only in large yards for various services, and as control links to remote antenna sites. The overwhelming majority of railroad radio communications takes place on the VHF high band, and it is unlikely this will ever change due to the large investments railroads have made in VHF radio equipment.

All of the base stations, locomotives, cabooses, and mobile units of each individual railroad company are equipped with at least one common channel that is used over the entire system of that company. This is most commonly referred to as the "road channel", and it is used for conversations between wayside stations and trains, train to train, and locomotive to caboose on the same train(and also just about any other combination you can imagine). Many railroads, both large and small, use the same road channel for all aspects of their operations in all areas, including yard use, police, supervisory, and track maintenance.

Railroads (continued)

BURLINGTON NORTHERN/FORT WORTH & DENVER

Road channel systemwide(all area operations)---- 161.100

CHICAGO, ROCK ISLAND & PACIFIC

Road channel systemwide(all area operations)---- 161.610

GREAT SOUTHWEST

All operations in Grand Prarie, TX area -------- 160.860

KANSAS CITY SOUTHERN/LOUISIANA & ARKANSAS

"F-1" road channel systemwide ---------- 160.260
"F-2" Shreveport, LA dispatcher channel:
  Nearest microwave relay tower to train ------ 160.260
  Train to nearest microwave relay tower ------ 160.350
Shreveport, LA dispatcher from nearest micro-
  wave relay tower to trackside stations and
  official's mobile units ---------- 161.250
Officials car-to-car ---------- 160.890
Company trucking subsidiary ---------- 160.305

MISSOURI-KANSAS-TEXAS

Road channel systemwide ---------- 160.590
Officials & railroad police car-to-car --------- 160.320
Railroad police car-to-car ---------- 160.635

MISSOURI PACIFIC

"F-1" road channel systemwide ---------- 160.410
"F-2" Fort Worth Centennial Yard channel ------- 160.470
Fort Worth Centennial Yard Hump ---------- 160.830
Company trucking subsidiary in Dallas ---------- 161.280
Company trucking subsidiary in Fort Worth ------ 161.310

SAINT LOUIS-SAN FRANCISCO

Road channel systemwide ---------- 161.130
Officials & railroad police car-to-car --------- 160.920
Maintenance of way ---------- 161.430

SOUTHERN PACIFIC/COTTON BELT

Road channel systemwide ---------- 161.550
Mobile unit access to company telephone system:
  PBX at Nevada, TX(30 miles NE of Dallas) ---- 160.680/161.400
  PBX at Midlothian, TX(25 miles SW of Dallas)- 160.800/161.490
Dallas Miller Yard car department ---------- 160.500/161.415
Railroad police car-to-car ---------- 160.860
Southern Pacific Transport trucking line ------- 159.930

Many roads above have base stations on the road channels of other area roads for interchange and joint track usage. Next month I will define many more terms, such as "what is a train?" It's really not as elemental as you might think. See you then!
P.S.--Please specify repeaters in your notes if you suspect them.

Railroads (continued)

Some of the largest railroad companies operating in the U.S. today have been formed by mergers in the recent years, for example Conrail, Norfolk & Western, Illinois Central Gulf, and the Chessie System. These actions almost always force the resulting larger railroad to maintain more than one road channel in all their locomotives and cabooses if they intend for that equipment to be able to operate over all the tracks of the new company. This is due to problems of frequency allocation. There are only 98 different VHF frequencies to be divided up regionally among the more than 700 railroad companies operating in the U.S., which makes it difficult to just allocate one frequency alone that each company can use over its entire system without interfering with another railroad's radio communications. This is one reason the Rock Island uses the frequency 161.610, which is normally a marine channel, as it's systemwide road channel.

So as a result, it is usually impossible for a railroad to merge with another railroad, and then go ahead and extend the use of it's road channel over the tracks of the merged company without directly stepping on some other railroad's toes in a location where they have the assigned right to use the frequency in question. The only solution other than a complete reallocation of frequencies(which is almost never done) is the expensive but unavoidable task of equipping all the locomotives, cabooses, and other units which will operate systemwide with the road channel of each old railroad included in the merger. Conrail was able to avoid this and came out with 160.800 as the road channel over all of the lines it was obligated to take over operation of. Norfolk & Western on the other hand merged with the Wabash and the Nickel Plate, and ended up with a three channel "road" radio configuration on all its engines and cabooses: Channel 1 --- 161.190(road channel on original Norfolk & Western trackage; Channel 2 --- 161.250(road channel on ex-Nickel Plate trackage; Channel 3 --- 160.440(road channel on ex-Wabash trackage.

Before starting in with other member's contributions next month, I'll round out this month by delving into my own notebook one more time, and listing all the railroad related channels in the Dallas-Fort Worth region of Texas. Some of the frequencies are exact duplications of the ones I listed for Oklahoma last month, but I've included them anyway so as to keep this list completely accurate for the area.

ATCHISON, TOPEKA & SANTA FE

Road channel systemwide ---------- 160.650
Mobile unit access to company telephone system at Cedar Hill, TX(10 miles SW of Dallas) ---------- 160.425/161.295
Maintenance of way systemwide ---------- 161.010
Saginaw, TX(10 miles N of Fort Worth) overall yard channel ---------- 161.370
Saginaw yard "blue" switcher channel ---------- 160.440
Saginaw yard "yellow" switcher channel ---------- 160.560
Saginaw yard "red" switcher channel ---------- 161.070
Saginaw yard "green" switcher channel ---------- 161.190
Cleburne, TX(30 miles S of Fort Worth) yard & shops car department ---------- 160.875/161.505
Cleburne shops company stores department ----- 160.275
Dallas Piggyback ramps ---------- 161.190
Santa Fe Trails trucking line ---------- 159.585

SATELLITES

Bill Blomgren & John Coker, Editors

Send information about satellite frequencies which you have received with type of traffic heard, orbital data, hobby receiving equipment and antennas and questions pertaining to satellite monitoring to: Bill Blomgren, 505 E. Mulberry, #3, Normal, IL 61761.

FLTSATCOM

Last month we discussed the MARISAT or GAPFILLER satellites currently being used by the International Maritime community and the United States Navy. This month we will be looking at the newest member of the Navy's communications system, the Fleet Satellite Communications system. This system is more commonly known as FLTSATCOM. The FLTSATCOM system when completed will consist of four geostationary satellites. Each satellite will be equipped with three seperate frequency bands. For this month's article we will only be concerned with the UHF (225-400 MHz) range since this is the only range that can be realistically monitored.

UHF Transponders

The UHF portion of each satellite contains 23 seperate transponders. Ten of these transponders are assigned for use by the United States Navy and twelve of these transponders are assigned to the United States Air Force. The remaining transponder is assigned to the United States Department of Defense. Both the Air Force and DOD portion of the satellites are used for data transmission and are therefore of little interest. The Navy portion of the satellites also contain a great deal of data transmissions but from time to time some clear voice transmissions can be heard. For this reason we will limit our discussion to the Navy channels, channels 1 through 10.

Channel Allocations

The first ten channels on each of the FLTSATCOM satellites are assigned as Navy Relay channels. Each of these channels employs FM voice modulation and have a band width of 25.00 KHz. This means that with the aid of a converter these ten channels can be monitored on a normal scanner such as a BC210. Channel one on the FLTSATCOM satellites is used as the Fleet Broadcast channel and all major fleet information is broadcast over this channel. This channel also has an uplink frequency in the 7250-8400 MHz range and a downlink frequency in the 225-400 MHz range. The remaining nine channels use UHF (225-400 MHz) for both uplinks and downlinks. Channel one employs the 7250-8500 MHz uplink range to help reduce jamming of the critical fleet broadcasts by enemy forces.

Transmissions Are Secure

Don't be fooled by the fact that you can monitor these satellites with a simple converter and a scanner. As with most military communications you will hear only what they want you to hear. When a transmission is of critical nature or there is a need for security you will hear what can best be described as the sound of a "strangling turkey". This type of scrambling technique may also give way to data transmissions or at times digital voice. In fact, the fleet broadcasts are multiplexed and scrambled, and then sent as data.

Coverage Areas

The first FLTSATCOM satellite was launched on February 9, 1978 and was placed at 100°W longitude. This first satellite now provides coverage of all of North and South America, the states of Alaska and Hawaii, and coverage of most of the eastern Pacific Ocean, the western Atlantic Ocean to about 30°W longitude, and all of the Caribbean. A second FLTSATCOM satellite was launched on May 8, 1979 and was placed at 23°W longitude. This satellite now provides coverage of the entire Atlantic Ocean, Western Europe and all of Africa. It also covers all of Central and South American and covers the United States as far west as the Mississippi River. Two more FLTSATCOM satellites will soon be launched to complete the project. When completed, the FLTSATCOM system will provide total global coverage with the exception of the polar regions. These satellites are all designed around a five-year life cycle.

SATELLITE LOCATION			
Satellite	Ocean	Longitude	Date of Launch
FLTSATCOM (F_1)	Pacific East	100°W	February 9, 1978
FLTSATCOM (F_2)	Atlantic	23°W	May 8, 1979
FLTSATCOM (F_3)	Indian	75°E	Not Launched Yet
FLTSATCOM (F_4)	Pacific West	172°E	Not Launched Yet

Downlink Frequencies

The following frequency information was originally presented in Tom Kneitel's book on federal frequencies and was later verified by Mr. Bob Grove (NC-006) the RCMA military editor. We have also verified these numbers by actual off the air frequency checks but we have not been able to determine precisely which frequency plan belongs to which satellite. We will therefore list the satellites based on Tom Kneitel's information and hope that we have placed the correct satellite with the correct frequency plan. We will not list uplink frequencies.

FLTSATCOM DOWNLINKS IN MHz					
Channel Number	Atlantic 23°W	Pacific East 100°W	Pacific West 172°E	Indian 75°E	Bandwidth
1	250.550	250.450	250.550	250.650	25.00F9
2	252.050	251.950	252.050	252.150	25.00F9
3	253.750	253.650	253.750	253.850	25.00F9
4	255.450	255.350	255.450	255.550	25.00F9
5	257.050	256.950	257.050	257.150	25.00F9
6	258.550	258.450	258.550	258.650	25.00F9
7	265.450	265.350	265.450	265.550	25.00F9
8	266.950	266.850	266.950	267.050	25.00F9
9	268.350	268.250	268.350	268.450	25.00F9
10	269.850	269.750	269.850	269.950	25.00F9

Overlapping Coverage Areas

Since the FLTSATCOM system consists of four satellites equally spaced around the equator some overlapping of signals can occur. To compensate for this the satellites have been designed around three different UHF frequency plans. In this way all of the satellites can be operated at the same time with little or no interference. The UHF antenna coverage pattern on the satellites is about 17°.

Summary

Generally if you have a good converter or receiver and a fair antenna system you should be able to pull at least FLTSATCOM (F_1) at 100°W longitude. What you will hear will most likely not be of any great interest and you probably won't even be able to tell where it is coming from. Often times the signals you will receive will consist of pulsating tones or teletype style data. You may hear scrambled voice and sometimes you will hear clear voice. The clear voice is usually related to training exercises or short coded tactal broadcasts but on occasion you can hear information related to emergency operations such as traffic from hurricane relief teams. In short, if you are expecting a lot of classified military information of great interest don't waste your time or money trying to monitor FLTSATCOM. If, on the other hand, your main interest is to see if you can successfully monitor a UHF satellite give it a try. There is a certain feeling of satisfaction in knowing that you can monitor a satellite from your own home even if the information received is not earth-shattering.

Editors' Note

We have been working with the Hermes Research and Development Company in Florida to try and develop a new generation of wide band converters (18-20 MH We have received preliminary specifications on a tentative unit capable of covering all of the 10 FLTSATCOM channels and as soon as a prototype unit is constructed we will test it and present the results of the test in the satellite column. The converter should work with most scanners and should cost around $100.00. Again, we emphasize this is a tentative plan and no firm commitment has been made yet. We will keep you advised on our progress.

The following frequencies were sent in by Rick Matthew of Vancouver B. C Canada.

136.0200	IMP-J (FM)	136.7100	INTASAT 1
136.0800	ISIS 1,2 (FM)	136.8000	IMP-J (FM)
136.1450	RAE-B (FM)	136.8900	IMP-H (FM)
136.2000	CAMEO	136.9200	OSO-8
136.2600	OAO-C (FM)	137.5750	RAE-B (FM)
136.4100	ISIS 1,2 (AM)	137.5800	IMP-J (FM)
136.4400	OAO-C (AM)	137.9200	IMP-H (FM)
136.5900	ISIS 1,2 (FM)	137.9800	IMP-J (FM)
136.6800	SAS 3	150.0000	TIP-3 (FM)

The following frequencies were sent in by Michel Lecompte (CAN-017) of Quebec City, Canada.

38.00	Radio Astromony (Ontario)
73.80	Radio Astronomy (Lake Traverse, Ontario)
74.00	Radio Astronomy (Lake Traverse, Ontario)
136.08	Canadian Satellites
136.41	Canadian Satellites
136.59	Canadian Satellites
136.95	Canadian Satellites
148.25	Canadian Ground Stations (CF21 Ottawa, Ontario, CF22 Resolute, NWT)
148.26	Canadian Groudn Stations (CF21 Ottawa, Ontario, CF22 Resolute, NWT)
401.75	Canadian Satellites
408.00	Radio Astronomy (Lake Traverse, Ontario)

Dave Mackes of Baltimore, Maryland, would like to know if anyone knows what satellites and frequencies are used to transmit weather data from NOAA hurricane recon planes back to the NOAA operations center. Dave states that the recon planes have made reference on HF regarding the use of satellites. Please send any information to the Satellite Column.

FEDERAL GOV'T and ★ MILITARY ★

Robert B. Grove, Editor

Send all Federal Government and Military frequencies (including those of military aircraft), radio system details, and related questions to: Robert B. Grove, Route 1-Box 156, Brasstown, NC 28902. Sensitive frequencies will not be published. Coast Guard material must go to the VHF Marine editor.

NEW FEDERAL GOVERNMENT FREQUENCY DIRECTORY! After considerable correspondence, phone calls, and personal visits to the Interdepartment Radio Advisory Committee over a period of years, it looks as though an exhaustive list of federal government frequencies — direct from IRAC files — is possible.

Because so many of our members felt that microfiche would be impractical, I have investigated all of the possibilities of a printed format. It looks as though such a list would be possible, and a printer is now working on the costs.

While it is too soon to reveal details about the work, this much is already apparent: The list will be in order of frequency; it will contain the name of the agency, city, and state of location. Frequency range will definitely include 30-420 MHz INCLUSIVE, and will probably also include the entire 2-30 MHz shortwave spectrum as well (possibly as a second volume).

This will be the only official directory of US federal government frequency assignments available, and will be the entire unclassified run with no deletions. No lists submitted to me in good faith from RCMA members will be printed.

Because of the immense expense of such an undertaking, I need to know how many of our members would be seriously interested in a copy of the directory. Although cost is not yet firm, it will be somewhere in the $10-$25 range, bound and printed like a book. And it will be big--tens of thousands of discrete listings!

To avoid burdening Iden and the RCMA board with tabulations, members should send inquiries directly to me at the address in the column heading. If interest is great enough, an enlarged edition with helpful articles, tables, and other pertinent information may be considered. Please send inquiries, postcards, or letters immediately, as publication is imminent.

HANDLER PUBLISHED NEW COMMUNICATIONS GUIDE: Steve Handler, RCMA member and author of several previous frequency guides for shortwave and scanner listeners, has just printed his enlarged "RADIO COMMUNICATIONS GUIDE". The bound volume contains 79 pages of useful frequency information for shortwave and scanner listeners. As in previous editions, the book is divided into agencies and services, with frequency entries throughout the listening spectrum. In addition to reprinted lists from his earlier editions, there are additions which have not previously appeared. In total, dozens of separate services are included — military, embassies, Red Cross network, Space Shuttle, aviation, marine, INTERPOL, government, and many more.

Military & Federal continued

An expanded VHF/UHF service list is of particular interest to scanner listeners. Accuracy in this portion of the spectrum is quite good, although lower frequency lists are somewhat dated.

For only $6.95 per copy, the new Handler publication will prove a worthwhile addition to any listener's library. (For first class rush order, add $1 postage and handling). Orders may be sent to: Handler Enterprises, Inc., P.O.Box 48, Deerfield, IL 60015.

AND A NEW SCANNER CONVERTER FOR THOSE DESIRABLE FREQUENCY RANGES

This is a red letter month for happy announcements. Hermes Research and Development Company (3997 Elkcam Blvd. S.E., St. Petersburg, FL 33705) has just announced the release of a series of scanner add-on converters for the 180-300, 300-420, and 550-900 MHz frequency ranges! Any 18 MHz bandwidth may be selected, down-converted to 32-50 MHz on the scanner. Prices for any of the models is under $100. Write to them directly for more information.

COLUMN POLICY: All frequency lists which are sent to this column are printed if they conform to club policy of not compromising federal government law enforcement. Many frequencies are "fuzzy" -- in some geographical areas they are used for routine traffic, while in others they may contain sensitive communications. It is extremely difficult to make these judgments without knowing the overall uses for specific discrete frequencies.

WHAT ABOUT THE "DROPOFF" IN FEDERAL LAW ENFORCEMENT COMMUNICATIONS?

Response from members concerning the reported reduction in on-air federal government law enforcement communications has been mixed. Some members confirm the reduction in their geographical areas, others report no change at all. There have been a couple of news notes, however.

Apparently the Motorola DVP (digital voice protection) scrambling technique is meeting with some official success. It is reported from several unofficial sources that the Secret Service intends to go DVP within a year or so, and some police agencies are already testing the technique with prospects of acquiring the system.

Another change has been the gradual shift of VHF operations toward UHF. There are no programmable scanners currently being manufactured which are designed to tune below 420 MHz, although several (notably Regency products and the Bearcat 250) can be commanded to dip below their bottom limits.

We would appreciate our members keeping us posted about any noticeable policy changes in federal government communications.

LISTENING IN ON FLEETSATCOM The latest in a series of military communications relay satellites, FLEETSATCOM, may be heard transmitting back to Earth on its FM downlink frequencies between 240-270 MHz. We are awaiting a Hermes converter centered near the middle of that range to "see" what we can hear!

For more on satellite communications (besides Bill Blomgren's and John Coker's fine column), members may wish to subscribe to Geoffrey Falworth's SATELLITE NEWS. Write Geoffrey at 12 Barn Croft, Penwortham, Preston PRI OSX, England. Enclose an IRC (International Reply coupon) for a sample of his dependable and accurate publications. They are most informative.

Military & Federal continued

HIDING OUT. Is it possible for a transmission to be made in the clear, right smack in the middle of a tuneable scanner range, and still not be overheard by a monitoring enthusiast? Bob Wells thinks so, and he suggests an interesting hypothesis. Suppose an agency were to transmit with low power on a frequency 21.6 (approximately) above a cluster of loud mobile telephone carriers. Regency's, Bearcats, and Pro-2001's would have a fit picking a weak signal like that out of the field of images. Interesting postulate, Bill!

From Mark (IL-8)
170.875 Marion Federal Penitentiary (also Federal prisons nationwide. ed.)
Thanks, Mark.

From Bill (KY-002) Lexington, KY

162.225	VA hospital
163.200	US Marshal
163.4125	WUE520 Army Corps of Engineers
165.0125	AAC610 Bluegrass Army depot
168.525	VA hospital paging
170.875	Federal penitentiary

We received an anonymous list of interesting Canadian frequencies this month, and do not believe that they are sensitive. Thanks to our anonymous Canadian donor!

140.310	RCMP Toronto Airport SJE354
140.730	RCMP Niagara Falls
140.400	RCMP Peterborough
141.270	Dept. of Revenue, Ottawa
141.150	National Museums security, Ottawa
141.030	External Affairs, Ottawa
141.480	External Affairs, Ottawa
149.020	External Affairs, paging, Ottawa

From Rod (VA-012)

166.725	US Park Service, Arlington, VA (ch.1)
411.625	US Park Service repeater link
411.725	" " Washington, DC
411.825	" " Washington, DC
411.925	" " Washington, DC
409.050	John F. Kennedy Center (simplex) Washington, DC

ERRATA George DuBois has requested a couple of corrections in his contributions in the November, 1979 Military column. Apparently I misread his abbreviations.

163.4875	(change "Special Police" to "Security Police")
165.1625	(change "police" to "fuel operations")
413.125	(change "Special Police" to "Security Police")

Because of the holiday mail congestion, contributions have been a little slower this month. How about a few more members sending in listings? I'll do my part to share them and make any additions which I feel may be helpful. See you next month!

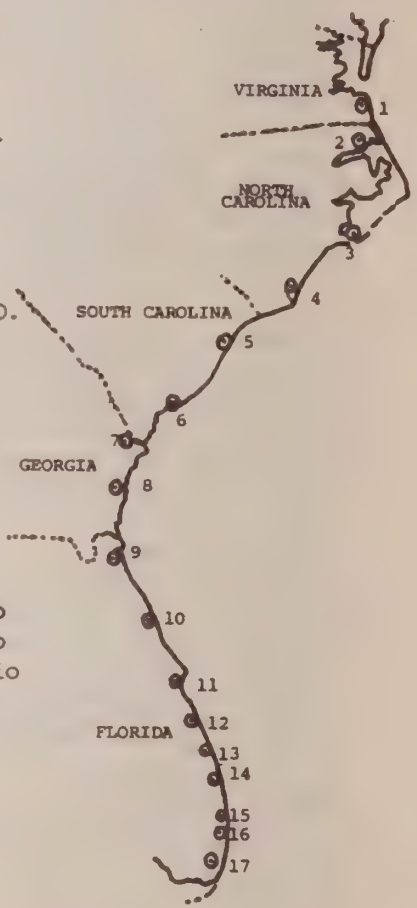
VHF Marine

Rod O'Connor, Editor

Send information, articles, frequencies and how they are used and questions that relate to private, commercial and Coast Guard VHF maritime and inland waterways radio communications to: Rod O'Connor, USCG Group, 259 High St., South Portland, Maine 04106.

MARINE OPERATORS
SOUTHEAST COAST OF U.S.A.

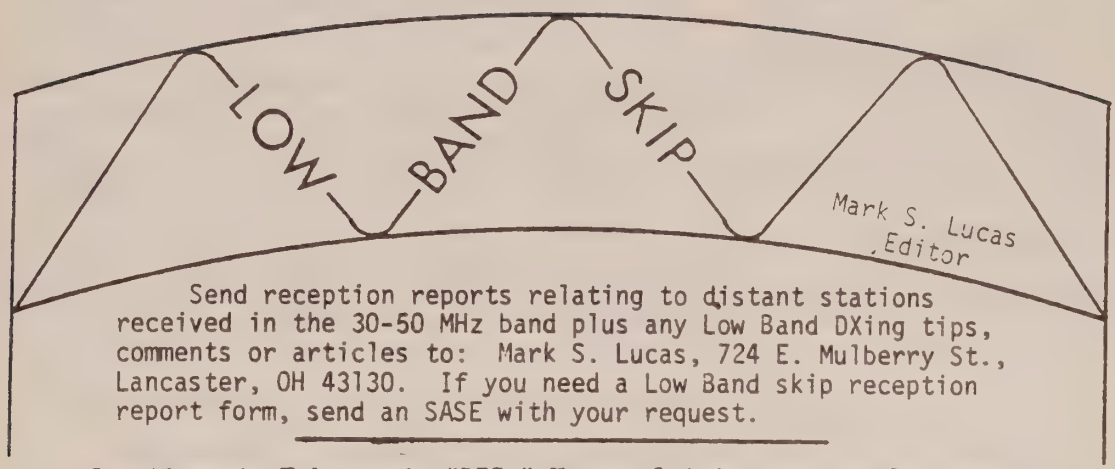
Map#	Service Area	Channel	I. D.
1	Norfolk/Hampton VA	26&27	Norfolk M.O.
2	Albemarle Sound NC	24	Eliz.City M.O.
3	Morehead City NC	28	Morehead C. M.O.
4	Wilmington NC	26	KFT 301
5	Georgetown SC	24	KUF 730
6	Charleston SC	26	Charleston M.O.
7	Savannah GA	28	KTD 477
8	Brunswick VA	24	Brunswick M.O.
9	Jacksonville FL	26	Jacksonville M.O.
10	Daytona Beach FL	28	KWS 605
11	Cocoa FL	26	KTR 945
12	Vero Beach FL	27	KVY 628
13	Stuart FL	26	St.Lucie M.O.
14	West Palm Bch. FL	28	Palm Beach M.O.
15	Fort Lauderdale FL	26	KEW 823
16	Miami FL	25	Miami M.O.
17	Homestead, FL	27&28	Homestead M.O.
Not on Map	Lozia, Puerto Rico	26	WCT Marine Radio
	Ponce, Puerto Rico	28	KRV Marine Radio
	St. Thomas, Virgin Is.	25&28	WAH Marine Radio



For the West Coast of Florida, see the Jan. 1980 RCMA Bulletin.

Coming in the next edition will be the final installment of Marine Operators for the U.S.A. The Mid-Atlantic States and New England will be covered.

Note to any Canadian members:
I am interested in obtaining any information on the marine band as used in Canada, as well as any lists of the Canadian Marine Operators.



Send reception reports relating to distant stations received in the 30-50 MHz band plus any Low Band DXing tips, comments or articles to: Mark S. Lucas, 724 E. Mulberry St., Lancaster, OH 43130. If you need a Low Band skip reception report form, send an SASE with your request.

Greetings to February's "LBS." Have a lot to cover,so let's go.

FROM JAY (SA-CA-004): 33.74 MHz KGC-522 NO ID Fire and Rescue
BASE BC-250 11-17-79 1700 PST Location (?) 2100 miles(?)
(Editor-Jay believes it to be Cleveland,Ohio. No info in "Police Call." Cleveland members are requested to respond with any ideas!)
33.90 MHz KQI-316 NO ID Fire and Rescue
BASE/MOBILE BC-250 11-17-79 1634 PST Location (?) 2100 miles(?)
(Editor-Again,Clevelanders HELP!)

FROM EDWARD (NJ-017): 45.32 MHz KOL-924 "Yamhill Co." Police
BASE ACT-R10H/L 11-11-79 1100 EST McMinnville,Ore. 2620 Miles
37.10 MHz KVR-789 "Boulder Co." Fire/EMS
BASE BC-101 11-10-79 1200 EST Sugarloaf,Colorado 1800 miles
37.18 MHz KKG-983 "Taylor Co." Police/SO
BASE BC-101 11-10-79 900 EST Abilene,Texas 1620 miles

FROM MICHAEL (IL-014): 33.70 MHz NO CALL "OCD" Fire
BASE/MOBILE BC-220 11-20-79 1245 CST Los Angeles 2054 miles
33.98 MHz NO CALL "OES" Fire
BASE BC-220 11-21-79 1119 CST Los Angeles 2054 miles
33.82 MHz NO CALL "OCD" Fire
BASE/MOBILE BC-220 11-20-79 1315 CST Los Angeles 2054 miles
35.38 MHz NO CALL "Los Angeles Mobile" Phon
BASE/REPEATER (OUT) BC-220 11-25-79 1330 CST Los Angeles 2054 miles

FROM BILL (MD-005): 46.46 MHz KMA-526 "Control" Fire
BASE Regency "Whamo 10" 11-19-79 1200 to 1650 EST San Francisco 2400
33.90 MHz NO CALL "Lakes Region" Fire
BASE Whamo 10 8-15-79 2222 EST New Hampshire 400 miles
(Editor- Nice to get a Sporadic-E report!)
39.18 MHz KFI-599 NO ID Police
BASE Whamo 10 11-4-79 2000 EST Gila County,Arizona 2000 miles
39.18 MHz KEX-317 NO ID Police
BASE Whamo 10 11-19-79 1719 EST Coconino County,Arizona 2000 mil

FROM JOHN (IL-012): 46.38 MHz NO CALLS OR ID GIVEN Business
BASE/MOBILE BC-101 12-22-79 0900 CST KINGSTON,JAMAICA (!) 1600 mil
(Editor-I wonder what the weather is like this time of year?)

FROM MIKE (CA-RI-011): 44.94 MHz KCA-999 "Headquarters" State PI
BASE/MOBILE Regency Touch 16K 12-6-79 1632 EST Warner or Stoddard,N.H.
45.32 MHz KDC-300 "Buncombe E.O.D." Fire (1
BASE BC-220 12-4-79 1423 EST Ashville (Buncombe Co.),N.C.
31.78 MHz KIK-310 "Mayfield" Forestry
BASE/MOBILE BC-220 12-9-79 1359 PST Mayfield,KY 1620 miles
31.70 MHz KFI-521 "Tower 13-3" Forestry
BASE BC-220 12-9-79 NO TIME GIVEN Yellville,ARK. 1400 miles
(Editor-And who says a synthesized Bearcat scanner CAN'T go that low!?)

LOW BAND SKIP (CONTINUED)

FROM MIKE (CA-RI-011) (Cont): 44.62 NO ID "Bordontown" State PD
BASE BC-220 11-22-79 1620 EST Hightstown,N.J. 2360 miles
33.74 MHz NO ID "Waynesboro" FIRE
BASE BC-220 11-29-79 1507 PST Waynesboro,VA. 2150 miles
46.14 MHz KCT-682 KCT-682 FIRE
BASE/MOBILE Patrolman 3A 11-19-79 0956 PST Willoughby,Ohio 1825 mi.
46.14 MHz KAT-772 "Painesville" FIRE
BASE/MOBILE Patrolman 3A 11-19-79 0858 PST Painesville,Ohio 1825
33.70 MHz KCG-651 "KCG-651" FIRE
BASE BC-220 11-11-79 1859 EST Derby,Conn. 2250 miles.

FROM RICK (NJ-001): 40.31 MHz KOP-525 NO ID Government (?)
REPEATER BC-250/Touch 11-29-79 1635 GMT (Near Alamos?)
37.19 MHz NO CALL OR ID Business
Repeater BC-250/Touch 12-6-7-9 1405 GMT Spanish Construction company or utility. Talked about 115 Volts to beach houses.
37.62 MHz KKA-617 "KKA-617" Business
BASE BC-250/Touch 12-4-79 1544 GMT Mathis,Texas
41.62 MHz NO CALL "Flinco-9" Petroleum (?)
BASE BC-250/Touch 12-1-79 1707 GMT Likely a Venezuelan drilling rig.
39.86 MHz WBC-418 NO ID Police
BASE BC-250/Touch 12-1-79 2252 GMT Sierra County,Cal.
36.90 MHz KCA-585 NO ID Fire
BASE BC-250/Touch 12-1-79 1420 GMT Plymouth,Mass.
(Editor-Rick states this is probably a South American repeater output of 33.70 MHz input)
35.88 MHz KVC-658 NO ID Business
BASE/MOBILE BC-250/Touch 11-29-79 1449 GMT Bayamón,Puerto Rico
39.82 MHz KOB-568 "Mission to Mission 2" S.O.
BASE BC-250/Touch 11-14-79 2054 GMT Lake County,Montana
40.40 MHz NO CALL OR ID Service (?)
BASE BC-250/Touch 11-15-79 1359 GMT PTA-Caribbean
39.18 MHz Parques Nacionales NO ID Parks(?)
BASE/MOBILE BC-250/Touch 11-15-79 1406 GMT Caracas,Venezuela
44.71 MHz NO CALL OR ID Telephone Repeater
BASE/MOBILE BC-250/Touch 11-20-79 South America
39.82 MHz KOD-276 NO ID Sheriff
BASE BC-250/Touch 11-20-79 2153 GMT Hardin (Big Horn Mt.),Montana
40.39 MHz NO CALL OR ID Service(?)
BASE BC-250/Touch 11-16-79 1756 GMT Probably Guadalajara,Mexico

FROM YE EDITOR (OH-001): 39.36 MHz KGT-612 "LS-4" Sheriff (?)
BASE/MOBILE BC-250 12-15-79 1435 EST LOCATION????
("Police Call gives location as "White Tanks Mtn.,Arizona. Is in parallel with 39.96 MHz,with the same dispatcher. 39.36 appears almost like a repeater output,with a short squelch tail.)
40.10 MHz NO CALL OR ID Military(?)
BASE BC-250 11-25-79 1200 EST RTTY or Telemetry
(Also noted once what appeared to be a MARS type ham net)
40.20 MHz NO CALL OR ID Military or Govt.
BASE(?) BC-250 11-25-79 1150 EST NASA 36 bit binary code format signal.
40.53 MHz NO CALL OR ID Military or Govt.
BASE(?) BC-250 11-25-79 1230 EST Format using about 1000 (+/-) baud rate of digital telemetry signal.

I have recordings of these for those who might be able to help.

In addition to loggings printed above,Rick gave a long list of Russian, and British Isles loggings,but they were too incomplete to publish here. Until March, the best in the hobby and 73!

Mark

FCC TOPICS

George DuBois, Editor

Send FCC news and information of interest that relates to two-way communications above 30 MHz and questions regarding the FCC Rules and Regulations to: George DuBois, 10048 NE Campaign, Portland, OR 97220.

The Remote Pickup Broadcast Service

A look at Part 74 this month, at least the frequencies the scanner listener would be interested in. Besides the dispatch of reporters and other newsgathering efforts, these channels are for the transmission of programming material, cues, signaling and remote control. The following channels are for individual station use, as opposed to national networks:

152.87	153.17	161.64
152.93	153.23	161.67
152.99	153.29	161.70
153.05	153.35	161.73
153.11		161.76

The channels in the first two columns are shared with other services.

Also available are 166.25 and 170.15 mHz, except within 150 miles of New York City, the state of Alaska and a part of the Southeast.

The following frequencies are for transmissions requiring no more than 25 kHz of bandwidth:

450.0875	450.3875	455.0875	455.3875
450.1125	450.4125	455.1125	455.4125
450.1875	450.4875	455.1875	455.4875
450.2125	450.5125	455.2125	455.5125
450.2875	450.5875	455.2875	455.5875
450.3125	450.6125	455.3125	455.6125

These channels have a bandwidth limit of 50 kHz:

450.05	450.55	455.05	455.55
450.15	450.65	455.15	455.65
450.25	450.7	455.25	455.7
450.35	450.75	455.35	455.75
450.45	450.8	455.45	455.8
	450.85		455.85

For transmissions requiring 100 kHz of bandwidth, frequencies 450.925 and 455.925 are available.

The following are available for signalling and remote control:

450.01	455.01
450.02	455.02
450.98	455.98
450.99	455.99

Some shortwave frequencies are still on the books, namely 25.87 to 26.07 mHz in .04 mHz steps and then in .02 mHz steps to 26.47. Activity, no doubt, is limited on these.

FCC Topics (cont.)

The best place to search for your local radio station is the VHF channels and the 25 kHz bandwidth UHF channels. If the station has a traffic reporter, listen during the rush hours, while they're talking on the air, if possible, but remember they might tape it first and then broadcast it. One of these channels in your mobile scanner gets you the traffic reports sooner as they relay accident info to their pilot and without having to listen to the radio station! The more obscure stations require a little more effort. Search during a major casualty or big news event, if they have any news department at all. Larger TV stations will usually have two channels, one for general use and a separate one for the ENG (Electronics NewsGathering) van, if they have one. Search the next time your favorite station has a 'live remote'. It's interesting, listening to them set up the microwave link, the reporter cueing, etc. A smaller station may have one channel for dispatching reporters or, quite possibly, simply be licensed on a Business Radio Service channel. Bear in mind that one channel simplex (base and mobiles on the same channel) is authorised in both the 450 and 455 bands, but if a repeater is used, the output will usually be in the 450 area.

Most stations keep a close ear to a scanner and will send a reporter to follow the emergency vehicles to the scene of an event for a story. (Note I <u>didn't</u> say ambulance chasing!) Listening to one or two of the more active TV stations in your area allows you to keep up on 'hot' events in your city without listening to all the police channels all of the time.

<u>It's all politics, anyway.</u>

Thanks to Roger Ervin in Hercules, Ca. for forwarding an article from Electronics magazine on the recent World Administrative Radio Conference (WARC). The main controversies were Shortwave broadcasting allocations (most countries want more, the Russians want less (more stations to jam)) and satellite allocations (most countries want more, the developing nations want shortwave space for point-to-point use). Anyway, the conference did approve equal sharing for TV broadcasting and land mobile use above 806 mHz, which may open up the 851 band for use in border cities like San Diego, but they only allowed land mobile use secondary status to broadcasting from 470 to 806. (What did our delegation have in mind?) The conference disallowed an exclusive satellite band within the 225 to 400 mHz band which the US wanted for a worldwide satellite communications system. The US indicated it might not pledge observance of this provision. In other words, to hell with them.

<u>FCC Doings</u>

The FCC has acted on a proposal from Bell & Howell for a low-power paging service for the blind. B & H visualised a simple service with vibrater-type paging receivers for such simple uses as a parent calling a deaf child home or the activation by a doorbell or smoke detecter. But the FCC proposed the use of F9Y (digital) transmissions using the latest technology to provide service for the blind, deaf or physically handicapped, with LED readouts of messages or tactile braille

FCC Topics (cont.)

readouts for the blind, and the capabity to reply, if needed. Voice will not be allowed. The service will be in the Special Emergency Radio Service, with a maximum power of 10 watts. The paging frequency 43.64 was chosen since it only has 44 licensees nationwide and with the current skip conditions they anticipate heavy shifts to 800 mHz soon anyway. The new paging service will have equal sharing until Dec., 1984, after which it will be the primary service. 35.02 is a low power Business Radio Service channel with only 180 licensees nationwide, mostly in industrial complexes, so it was chosen as the reply channel. Note these additions to the list in the November column.

A new Subpart H was added to Part 97 specifically covering amateur-satellite operations. Parts 97.401 through 97.427 will specifically cover satellite-earth operations that are only covered generally in other subparts. This includes the 144-146 and 435-438 mHz bands.

In it's still continuing effort to streamline licensing procedures, the FCC will consider whether to allow temporary licensing in the Business Radio Service, for additional users of shared, existing repeaters.

ASSOCIATION OF NORTH AMERICAN RADIO CLUBS

NEWS HIGHLIGHTS

ANARC is a federation of the most responsible, well established radio listening clubs in North America. RCMA attained Full Member status in ANARC in 1977. For a list of the ANARC Member and Associate Member clubs send a self-addressed, stamped business size envelope with your request to the address below. For an annual subscription to the monthly "ANARC Newsletter" send $3.50 to: ANARC, 557 N. Madison Ave., Pasadena, CA 91101.

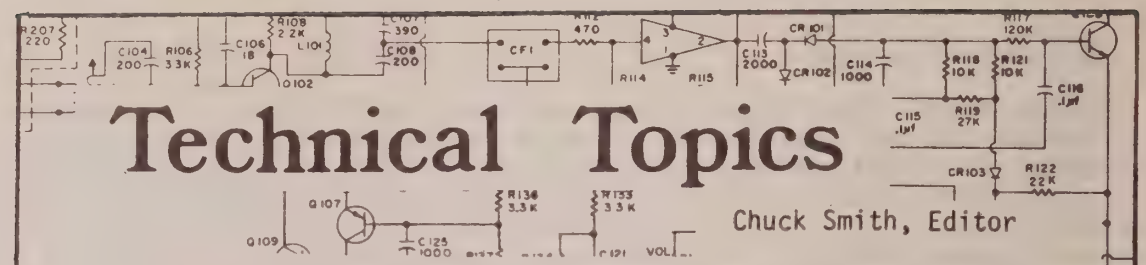
ANARC 1980 SLATED TO BE LARGEST RADIO LISTENER'S ASSEMBLY IN N.A.

Continuing the forward stride of success, ANARC 1980, to be held July 18-19-20 (Fri/Sun) at the Irvine campus of the University of California, appears to be consolidating the momentum gained through the outstanding ANARC Convention in Minneapolis, MN, in June, 1979.

Leading DXers and listeners throughout North America have already indicated that they will attend. It is hoped that many overseas S/W radio broadcasters, as well as those from U.S. and Canada, will attend also.

ANARC congresses are traditionally "all-wave" in scope, for both "guys and gals", and all DX listeners are cordially welcome to attend.

For registration and information, write to Stewart MacKenzie, 1980 ANARC Convention Chairman, 16182 Ballad Lane, Huntington Beach, CA 92649 USA. Enclose a SASE for reply. Overseas, kindly enclose three I.R.C.'s.



Technical Topics

Chuck Smith, Editor

Send all equipment reviews, technical articles, technical tips and questions on such subjects as receivers, antennas, preamps, accessory equipment, repeaters, links, tones, scramblers, non-voice data transmissions or even computer applications for monitoring to: Chuck Smith, 4901 Heil Ave., #3C, Huntington Beach, CA 92649.

Greetings to one and all, and welcome to the February, 1980 issue of the RCMA Newsletter, or whatever the new name will be after all the votes have been counted. I must admit that the developments of the past couple of months, aided by a little bit of personal reflection on my part, have made me feel a whole lot better about the future of this Newsletter and of our organization in general. The much-needed assistance required by Iden in assembling and pasting up the Newsletter has fortunately materialized in the persons of BRYAN (CA-OR-097) and JOHN (CA-OR-078), leaving Iden enough time so that he supposedly will be able to continue as managing Editor. If everyone knew Iden, they would surely realize what a tremendous asset his mere presence can be to our organization in the critical months that lay ahead. At any rate, it seems that the ability of the Newsletter to expand will be limited only by our own desires for growth. If the members as a whole were willing to volunteer the required additional financial expenditure, there is no doubt that the Newsletter would soon shed its cocoon and emerge as a full-fledged magazine; the first, just as our club, devoted exclusively to public service monitoring.

Since I have a lot of material to cover, I'll leave my editorial comments at that and proceed right on to the stuff that you're really interested in.

OUT-OF-BAND, OUT-OF-LUCK!!

A letter from FRANCIS, a new California member who has not yet received an RCMA membership number, says, in part:

"A San Francisco member sent me your September 1979 Newsletter, and I found it both interesting and useful, particularly the article on BC-250 programming tricks. By backing down from the VHF band I was able to reach the 144-146 MHz 2-meter amateur frequencies, which I programmed into the regular channels (using a repeater list for the Bay Area). However, although the frequencies are in the radio, nothing ever comes in on them, although I can receive others in the 146-148 MHz range from the Bay Area. Did you have another article on the same subject in a previous Newsletter? I am looking forward to a review of the BC-300 when it is released."

Well, the answer to this problem sort of falls back on some information that I had discussed in the past month or so, and that is the VCO limits in these programmable receivers. Recapping briefly, the heart of these receivers is the frequency synthesizer, which generates the local oscillator frequency in response to digital information from the microprocessor, and thereby tunes the radio to the desired frequency. Part of the frequency synthesizer is the VCO, or voltage-controlled oscillator, which generates a signal the frequency of which is controlled by an ex-

ternal DC voltage. This oscillator was designed as an integral part of the receiver, and consequently will not operate much beyond its intended design limits. Soon after you leave the range of frequencies for which the receiver was designed, we will find a point at which the VCO and its control circuitry cannot operate properly, and at this point the radio will stop receiving signals. This actual point will vary from unit to unit; in fact, some of the earlier BC-250's had VCO's that would fail after some time in operation, even on normal frequencies within its programming range.

In these cases, the ability to program the microprocessor for out-of-band frequencies is purely academic, since the rest of the equipment is not entirely up to the challenge. Of course, no fault can be laid on the hardware itself, since it cannot be expected to perform beyond the bounds for which it was intended. In cases like these, where involvement with public-service band monitoring arouses your curiosity about adjacent services, perhaps a small investment in a receiver made for these frequencies might be justifiable. I too, wish the BC-250 would cover the lower end of the 2-meter band, especially now that repeaters are operating in this area of the band. At any rate, FRANCIS, welcome to the RCMA, and I hope that you find membership interesting and informative.

SPECIAL SPEAKERS FOR MONITORS

RON (IA-010) asks "Is there a difference between a communications speaker and a stereo speaker, for example, a Motorola Business Band and a Jensen coaxial speaker??"

Boy, is there ever a difference!! Since radio communications consists primarily of the human voice, emphasis is given to the audio frequencies between 300 and 3000 hertz. Transmission or reception of any frequencies other than these does not contribute to the intelligibility of the signal, and in fact is detrimental to band economy since in some cases it may increase the bandwidth occupied by the signal. A speaker which is designed expressly for communications use has been optimized for best response at these voice frequencies, and therefore would give quite poor results if used for reproduction of music. Conversely, using a stereo speaker such as the Jensen coaxial speaker you mentioned would result in reproduction of unwanted frequencies, making the signal sound bassy in most cases. As a general rule of thumb, it is best to use each type of speaker for the purpose for which it was designed. While almost any type of speaker will get the job done, results will be more satisfying if you do.

BREAKING THE TENNELEC MS-2 CODE

Even though Tennelec is no longer in the business of manufacturing monitor receivers, the following information received courtesy of a new member from Ohio may be of some interest to those of you who still have a Tennelec MS-2 rattling around on the bench.

"The Memoryscan owner's manual and frequency code book contain some 4,000 codes. However, the scanner will receive many more than that. To obtain a code that is not published, locate the closest code to the frequency that you want and add or subtract a binary "1" from that code for each 5 KHz desired.

For example, if you want to receive 451.215 MHz the book shows only 451.200 and 451.225 MHz. Since 451.215 is 15 KHz above 451.200, you would want to add three binary "1"s to the code (see example below).

```
  0001 0000 0000 0100  = 451.200 MHz
+                 11  =     15 KHz
-------------------------------------
  0001 0000 0000 0111  = 451.215 MHz
```

Remember that the position of the "1"s gives the added numbers their value. For instance, 01=5 KHz, 10=10 KHz, and 11=15 KHz. The code book also stops at about 170.000 MHz. Some fire departments use frequencies above this and when I lived in Scranton, PA I couldn't hear our local fire department on 170.150 MHz. By adding the binary values in this way I was able to receive the transmissions. After all the figuring on paper to get the right frequency code I made a great discovery. The first four bits determine what band the receiver will operate on; for example:

(0001) 0000 0000 0100 = 451.200 MHz and.....
(0100) 0000 0000 0100 = 151.200 MHz.

By looking up 470.150 MHz in my code book and changing the first four bits to the pattern used for the VHF high band I was able to receive the transmissions on 170.150 MHz."

Many thanks to L. BENDICK (OH-) for this information. For those of you who are familiar with the binary programming format of the venerable old BC-101, this will seem like a home-coming since that receiver uses the same format.

OOPS!! DID I SAY THAT??

I have received several letters in the past month or two from puzzled RCMA members who were attempting to program their scanners to certain frequencies in the VHF high or UHF bands and were confused when their receivers refused to accept their inputted frequencies but instead tuned to another nearby one. For example, for some strange reason 151.2375 MHz got changed to 151.235 and 455.087 MHz got changed to 455.075. The first impulse would be to try again, only more carefully. The next natural assumption would be that possibly the radio was defective, or maybe to try some other frequencies to try and duplicate the phenomena. Finally, you throw up your hands and yell bloody murder!!

Well, maybe I can soothe your ruffled feelings and maybe I can't. If you're worried that maybe you got yourself a lemon I'm going to make you feel pretty good, but if you really wanted to receive that frequency I'm not going to be much help, I'm afraid. You see, to make a long story even longer, any synthesized radio such as we are using today will have certain steps or increments in which it will tune. This step is a function of the reference frequency used by the synthesizer, and will set the maximum resolution of tuning. The maximum resolution I've seen on any receiver to date is 5 KHz; in other words the radio will tune across the band in 5 KHz steps. To tune a frequency of 151.2375 MHz would require an accuracy of 500 hertz, ten times that of which we are capable. In fact, we cannot even tune the receiver to 151.2370 MHz, since that would require a resolution of 1 KHz, 5 times greater than we can achieve. Therefore, your scanner does the best it can with that it's got and tunes to the nearest "legal" frequency, which happens to be 151.235 MHz. Fortunately for us, that only amounts to an error of 2.5 KHz, and the radio will never know the difference. The signal will be heard just as if you were tuned to the exact transmission frequency.

So what about the UHF frequency 455.0875?? Why doesn't it round off to 455.085 like it looks like it should? Well, the problem here is compounded by the fact that when the FCC assigned frequency allocations in this portion of the spectrum they were originally on 25 KHz centers. In other words, they started at the bottom of the band and assigned a channel every 25 KHz until they reached the upper limit. When the designers at Bearcat or Regency or whoever saw that, they figured that since the fre-

quencies were assigned at 25 KHz intervals, it would be wasteful and expensive to allow the receiver to tune to those channels in between where there wouldn't be anyone anyway. You can't blame them for that. So...the radio tunes in 25 KHz increments on the UHF band, which makes things a lot easier for the microprocessor and frequency synthesizer.

But, as all good plans eventually do, this one got all fouled up!! As the spectrum got more and more crowded, the FCC did just what the hams did on 2-meters, and started using the in-between channels on 12.5 KHz centers, commonly referred to as "splits". These splits allowed twice the previous utilization of the spectrum at very slight increases in cost, since it's almost as easy to select between stations 12.5 KHz apart as it is at 25 KHz; just throw in a better filter. But what about us, the guys who want to monitor the "splits"? Too bad, they say, just too bad.

That isn't necessarily so, however. Here is a description of a procedure for changing the tuning increment on UHF to 12.5 KHz which works on a BC-250. There may be a better way, but this one I can testify to.

1. Program an upper and lower search limit on UHF, for instance, you might enter 455.000 as a lower limit and 456.000 as an upper limit. The actual values should bracket the area you wish to receive.

2. Open the squelch, then press the store button so that a frequency in this area will be entered into the search and store memory.

3. Press the manual button to terminate the storing sequence, then enter new upper and lower search limits in the VHF high band. For example, you could use 150.000 and 151.000 MHz. These values are not important.

4. Press recall button to bring the UHF frequency back into the display. Now by pressing the up or down search button you can search through this area of the UHF spectrum in 12.5 KHz increments instead of 25 KHz. You can listen to any frequency using this procedure, but any attempt to enter the frequency into the regular scanning memory will result in it being rounded off using the old rules of thumb.

If anyone has a better way of defeating this limitation, please drop me a line and let me know. I hope this discussion was of help to those of you who were being confused by this problem.

CRYSTAL HATERS ANONYMOUS

In a letter from STEVE (CA-SC-010), he asks if the crystal in a radio receiver designed to use them can be replaced with some sort of circuit that will allow the received frequency to be varied.

To answer this question thoroughly requires a brief description of just exactly what the crystal is and what it represents to the oscillator circuit that it controls. The crystal itself, while actually made from a piece of precisely cut quartz, can best be thought of as a series resonant circuit, complete with small amounts of series resistance and shunt capacitance. Keep in mind that a series resonant circuit exhibits minimum impedance at resonance, and therefore when used in such places as the base of a transistor oscillator circuit, will only allow oscillations to take place at or very near the resonant frequency of the crystal. By replacing the actual crystal with a resonant circuit, you will effect the same sort of control over the oscillators frequency, but without the stability which is a trademark of the crystal oscillator. Keep in mind, also, that the design parameters of the circuit itself have been optomized for the use of a crystal, and converting to discrete resonant control may yield an oscillat which is unreliable.

Another alternative may be to construct a small external oscillator controlled by the method of your choice, be it VFO or synthesizer, and the

inject the output of the oscillator into the crystal socket. This is a technique used by many commercial companies who manufacture synthesizers that are intended to interface with previously crystal-controlled receivers. Be sure to keep the output of the new oscillator to the minimum required for operation or you will overdrive the existing circuitry and generate spurious products that will cause you a lot of problems.

INVERTING GROUND PLANES

No, this is not a description of how to fly upside-down. I recently received a letter from ROBERT (CA-LA-148) which asked, in part:

"I've thought of using 1/2-wave coaxial antennas for the low band to achieve about a 3.75 db gain over a quarter-wave antenna but I was wondering whether a 1/2-wave ground plane might be better. The LA County Sheriff's Office uses them except they mount them with both bases together so that one faces the ground. Using this type of mounting arrangement would elevate the antennas but what kind of performance can be expected? Would 1/2-wave coaxials work equally as well and can they also be inverted?"

I chose this letter as an opportunity to define the differences between coaxial antennas and ground plane antennas, and also because it gives me a good chance to shed some light on this inverted antenna business. First of all, a 1/4-wave antenna (like the ground-plane), requires the presence of a ground or a simulated ground to supply the other half of the radiating system. When a 1/4-wave antenna is elevated above ground level, the radial system, or ground-plane, serves this purpose. Since the radials are placed at ground potential, their effect is to supply a "pseudo-ground" for the 1/4-wave element to work against. When fed at its base, as most of them are, the 1/4-wave ground plane presents a low impedance, and consequently is a reasonable match for the coaxial cable that most of us use, which has a 52 ohm characteristic impedance. The 1/2-wave vertical, however, when fed at its base, presents a high-impedance, and therefore requires some kind of matching device if we wish to use coaxial cable as a transmission line. The coaxial antenna is one of these devices, where an insulated 1/4-wave section, shorted to the vertical and grounded at the base, is used to transform impedances so that we can use coax or other low impedance feeding techniques. When the 1/4-wave section is wrapped completely around the antenna, we have a coaxial antenna, which requires no ground-plane system for operation. For those of you who are Citizen's Band operators, I give as an example the popular "Big-Stick" antenna manufactured by Shakespeare. This was a coaxial antenna, as evidenced by the fat, cylindrical bottom portion of the antenna and the fact that it worked just swell without a system of ground-plane radials.

After this explanation, I contend that the ground-plane antennas in used by the LA Sheriff's Office are actually 1/4-wave varieties, although they might be something else if the proper matching devices were in use. The reason for the inverting is this: the LA Sheriff radio system operates almost a full-duplex radio system, which means that dispatchers can be transmitting at the same time they are listening, and on frequencies that are separated only by a small amount. On higher frequencies, VHF high band and above, this problem can be solved by using one antenna for both transmission and reception, connected to the radio equipment through a device known as a duplexer. The purpose of the duplexer is to keep the transmitter frequency from entering the receiver and reducing its sensitivity. Physically, the duplexer is a series of tuned cavities, actually high-Q resonant circuits that look like cylinders. Well, at low frequencies such as those used by the LA Sheriff, constructing an effective duplexer is almost

a physical impossibility due to the large size of the cavities that would be required, so they use separate antennas for transmission and reception. Inverting one of the antennas and mounting it directly below the other is one technique that can be used to minimize the amount of energy picked up by the receiver from the transmitter. In this way, desensing of the receiver is kept to a minimum without having to locate the antennas far away from one another. I hope this answers your questions, STEVE.

SCANNER-TO-SCANNER INTERFERENCE

JIM (IL-035) writes and asks: "I would like you to answer the following question for me concerning my Bearcat 8 and my Bearcat 4-6. It seems that anytime I bring my 4-6 near the BC8 my ISPERN frequency (155.475) locks in on the BC8. Among the frequencies in the 4-6, if this has anything to do with it, are 39.62, 42.60, 155.34, 155.625, and 154.355. I am hoping that this can be corrected and I would also like to know if this is doing any damage to either radio."

Well JIM, I've run the numbers you've given me through my trusty calculator a bunch of times, and although I cannot explain exactly which frequencies are at fault, one thing is for sure, and that is that the two radios are interfering with one another as a result of the internal oscillators used to generate the local heterodyning frequencies. As you might guess, with this many frequencies in question there are a number of ways that they could mix together and generate a response that would be picked up by your BC8. This type of interference is sort of a local "intermod", and is a real problem when many transmitters and/or receivers must exist in the same immediate area, such as on a mountaintop repeater site. Rest assured, however, that neither radio is in danger of being damaged as a result of this interference.

BUILD AN AUDIO FILTER

Here is an extremely interesting and well-written construction article contributed by BILL (KY-002):

"In telephone and radio communications message clarity is of primary concern. High fidelity is neither needed or desired here. Intuitively, it is reasonable that within the range of human hearing (20 Hz to 20,000 Hz) a certain amount of the very lowest and highest frequencies could be eliminated with only a slight loss of intelligibility. Elimination of these unimportant frequencies would significantly reduce the noise content of the signal, especially when receiving weak transmissions. Studies have shown that a frequency range of 300 Hz to 3000 Hz is optimal for reducing noise while retaining high intelligibility.

Manufacturers of scanning monitors do not provide audio filtering on the assumption that the average buyer would be unwilling to pay for the added costs. The small inexpensive speakers supplied with scanners are of such low quality that they often cut the frequency extremes somewhat without the use of electronic filtering. However, these speakers also reproduce the speech band rather poorly and may be easily overloaded by out of band frequencies. Adding an external speaker improves speech band clarity, but introduces out of band frequencies that the internal speaker would not reproduce.

The solution is to use electronic audio filtering with an external speaker. This combination will often allow an ordinary scanner to achieve higher clarity than is obtained with professional transceivers. Signals

that were previously just below the noise level will become readable.

Two filters are needed for our purpose; one to eliminate frequencies below 300 Hz and one to eliminate frequencies above 3000 Hz. The low frequency filter is required because many land mobile stations use the band from 67 Hz to 250 Hz for tone-coded signalling. This signalling, called the continuous tone coded squelch system (CTCSS) is usually of no interest to the monitor listener. It is used when several users are on the same channel to prevent the transmissions of one user from opening the squelch of another users receiver. Each agency on the channel is assigned a particular tone which must be transmitted to operate its receivers. Thus the squelch responds to a tone rather than to the presence of a carrier. At the transmitter, the tone is to be adjusted so that it comprises about 1/10 of the total modulation. In practice, however, the tone level is often misadjusted and stations using the CTCSS often are received with a loud low-frequency hum. In severe cases the tone can override the voice transmission, making the message unreadable. Professional radios have a low frequency audio filter, thus the CTCSS tone does not interfere with transmissions. CTCSS is most often used on busy state and local police channels and on repeaters where limited access is required.

The frequencies above 3000 Hz are not typically used for tone signalling, but they do add a great deal of noise to the signal. A filter that removes these frequencies will make marginal signals readable while improving quality on stronger signals.

Now we must choose a filter type to accomplish the task of removing the undesired frequencies. The CTCSS signals are very close to the lower end of the speech band, so the filters should have sharp cutoff. To minimize distortion the filters should have a substantially flat frequency response. Finally, the phase response of the filters is of secondary importance in the reception of voice transmissions.

A Chebyshev type filter with low passband ripple, say 0.5 db peak to peak, should meet the requirements. To achieve sharp cutoff, a 5-pole filter is chosen. Higher order filters make the circuitry excessively complex and require highly precise components. Finally, the minimize the number of capacitors required, a voltage-controlled, voltage-source (VCVS) active filter topolgy is chosen.

In the circuit U1 is a Texas Instruments op amp type TL071, available in an 8-pin DIP package. U2 is a quad op amp, type TL074, packaged in a 14-pin DIP. These op amps are bifet types chosen for their high input impedance, low noise, and low distortion. U3 is a +8-volt regulator, type 78L08, available from Texas Instruments, Motorola, Fairchild, National, and others. All resistors are 1% metal film types; carbon composition resistors have insufficient accuracy and stability for use here. The active filter capacitors, all of which are non-polarized, should be $\pm$ 5% or better. Suitable types are polystyrene, polycarbonate, mylar, and NPO ceramic. Do not use bypass-type disc capacitors as they exhibit temperature instability, high voltage coefficient, and poor aging characteristics.

The circuit may be built on a small PC board and mounted wherever there is room inside the scanner. Power (+12 VDC) may be tapped off the scanner ON/OFF switch and ground should be connected to the scanner power supply ground. Then the filter must be connected into the audio circuitry of the scanner before the audio power amplifier. Some familiarity with your scanner's circuitry is required here. For example, in the Regency ACT-R10, capacitor C163 was removed and the filter inserted in its place. If all else fails, remove the wire from the hot side of the volume control and connect it to the filter input. Then connect the filter output to the volume control. A schematic for your scanner can usually be obtained

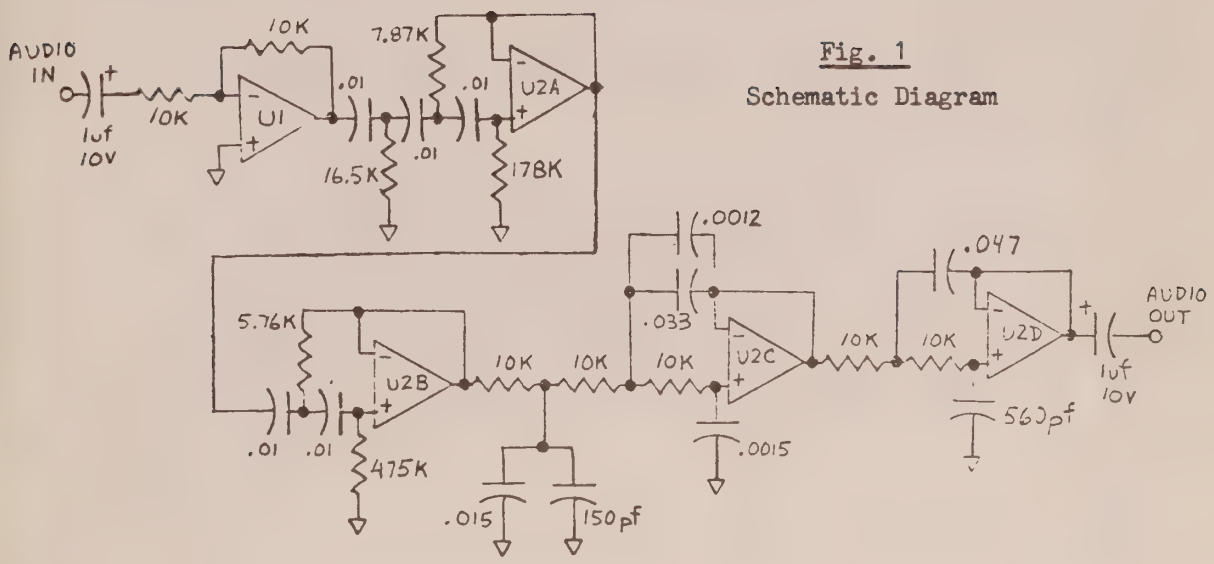
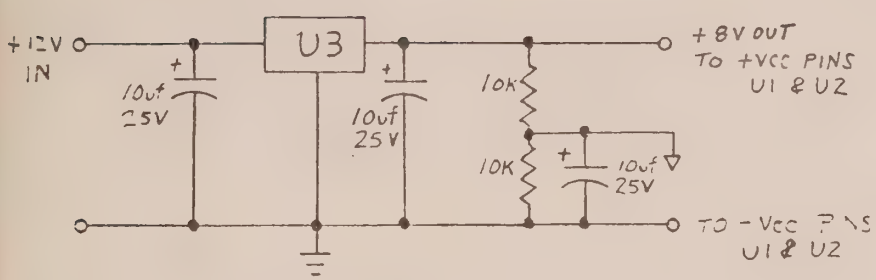
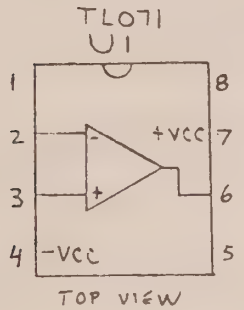
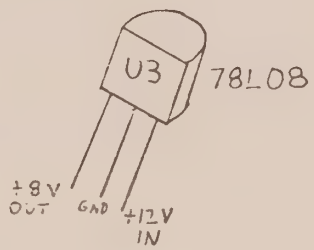
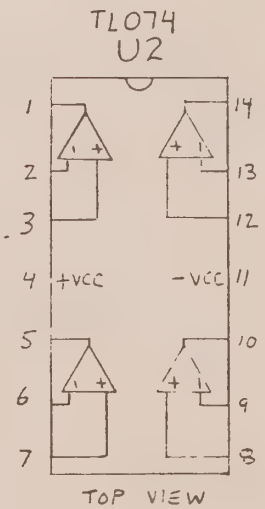


Fig. 1
Schematic Diagram









Audio Active Filter

from the manufacturer or from the Sam's series of scanner service books.

A final note about the external speaker: the Realistic (Radio Shack) Minmus 0.5 works very well with scanners. It is efficient enough to provide room filling volume with less than 1 watt input."

Many thanks to BILL for his well-written and informative piece. This filter would make a useful addition to anyone's listening post.--Ed.

WHICH CRYSTALS TO USE

JERRY (OH-015) wrote me a letter about a new hand-held scanner that he has, the Digi-10 from Russell Industries. The crystals to be used in the unit, according to the brochure he sent along, are the "standard" 10.7 MHz IF variety. This is the sum total of the data that was given as to what type of crystals to use, although JERRY stated additionally that they were specified for loading of 32 picofarads. Well, "normally" the unit will utilize low-side injection, which means that the crystal will generate a local oscillator frequency at 10.7 MHz below the desired signal. This, of course, is not a hard and fast rule. The 32 picofarad load simply means that the oscillator has been designed for use with crystals being ground for use with such a capacitive loading. You will not damage the unit in any way by trying crystals ground for a slightly different loading, such as 62 picofarads. The worst that could happen would be that the crystal would not oscillate at exactly the right frequency, or, in more severe cases, might not oscillate at all. I'm a bit surprised that the manufacturer doesn't know a little more about his own product and the type of crystals with which it will operate. I would suggest picking a busy local channel and trying the crystal while at one of your local dealers. Perhaps trying a few different types of crystals will aid in finding the ones that work best in this particular unit. Good luck!

STANDARDS FOR EQUIPMENT TEST REPORTS

Recently I received a letter from DAVID, a member from Baltimore who did not included his RCMA number, which expresses quite well some of my own sentiments about the way that good, thorough equipment test should be performed. I would like to share it with everyone in order to solicit still other opinions on the subject.

"I would like to give you some input on the Technical Committee. Most of the test reports on scanners aren't worth the paper they're printed on because the right measurements are never made. In my opinion a good test report is comprised of the following data.

1. Noise figure: Since the instrumentation to do this test isn't all that common, a conventional sensitivity test would be satisfactory if the following were done: a) check the sensitivity across the entire band, and b) 20 db quieting is measured, not 12 db SINAD.

2. Selectivity: a) Selectivity should be checked for all assigned channel spacings, and b) the response on both sides of the passband should be checked for asymmetry.

3. Intermodulation Distortion: The IM performance of scanners is pretty bad. The two-tone third order intercept point should be computed from IM data and listed for each frequency band and across each frequency band.

4. Image rejection: The image rejection for the primary image should be measured.

5. Reciprocal mixing: The VCOs of many scanners are very noisy. In fact you can hear some of them. The VCO's phase noise sidebands can mix

with a nearby strong signal and cause the effective sensitivity to be reduced. By making two or three relatively simple measurements you can make a reasonable estimate of a VCO's phase noise in db/Hz for a given frequency from the carrier."

This is the basic content of DAVID's letter, and I must admit that I like the way you think. It is true that buyers of scanner radios are not given nearly enough information with which to compare one product with another, and the data that is provided is often adulterated so badly by the advertising department that it is totally useless. This same problem is what motivated the Federal Trade Commission when they enacted new legislation which forced makers of stereo equipment to adopt standards when testing their equipment and reporting the findings of those tests. Perhaps if the manufacturers would voluntarily adopt some sort of universal procedure this kind of governmental intervention wouldn't be necessary. It is my hope that the Technical Committee, under the auspices of Bryan Hunnell, will do much to provide good accurate data about this equipment, and perhaps even lead to greater candor by the manufacturers themselves. Thanks for your letter, DAVID.

PARTING SHOTS

Here are a few items of general interest to wrap up the Technical Topics column for this month:

For those of you interested in high-performance reception on a single frequency, Electronic Signal Products, Inc., 2250G Landmeier Road, Elk Grove, Illinois 60007, has just the ticket for you. They are offering a single-channel receiver suitable for repeater use, covering any single frequency from 25-550 MHz. Measuring less than 5 inches long by 2 inches wide, these receivers boast sensitivities of from 0.15 to 0.18 microvolt for 12 db SINAD, and offer adjacent channel selectivity of -86 db. All of the models specify spurious signal rejection of better than 100 db. Three models are available: the DFS (25-100 MHz), the DSF-V (100-300 MHz), and the DFS-U (300-550 MHz). Prices range from $130 to $180, depending upon the model selected and the accuracy of the crystal installed. Write the manufacturer for more information, or you can call them at (312) 364-0080.

With greater interest from the amateur radio community in VHF and UHF activity, there has recently been several excellent articles written for ham radio publications that would also be of interest to those monitor listeners interested in the more esoteric aspects of the hobby. For those of you that are interested, I refer you to the following several articles published recently in Ham Radio Magazine:

1. Broadband FET Amplifier Design, by Alex J. Burwasser, N6DC
   p. 12, November 1979
2. Measuring Receiver Dynamic Range, by Sidney V. Kaiser, WB6CTW
   p. 56, November 1979
3. Low-Noise Preamplifiers, by Geoffrey H. Krauss, WA2GFP
   p. 50, December 1979

These articles contain a wealth of information for the monitor enthusiast who wants to further understand his hobby. Reading periodicals such as these is a good way to expand your horizons in electronics and perhaps develop an interest in still another great pastime, amateur radio.

Well, that's about it for this month. Good luck and good listening!!

? Beginners ?????? Corner

Have a question? If you are a new scanner listener and don't understand something about monitoring that most everyone else seems to understand, send in your question. When possible, your question and the answer will be printed. No answers will be sent by return mail. Your name will not be printed. Write to: David E. Crowley, 7234 Balson Ave., University City, MO 63130.

Our column is new, so we don't have any beginners' questions yet. Please feel free to ask anything you want to know. We all have blind spots and learning more is one of the most enjoyable aspects of the hobby.
In the meantime let me add my thanks to Iden for the effort and competance he has put into our Newlestter. Where else can we read, on a monthly basis, communications systems details complete with frequencies, many active in out own local areas. I hope sincerely that the Newletter thrives under his successors as well as it has under him.
This month, in place of questions and answers, lets expand the Beginners' Tip section, giving you some hints on starting your own frequency file.

Beginners tip for the month: The first step in cataloging your frequency information is to get a copy of Police Call for your area. Police Call lists almost all FCC licensees with frequency and call sign both alphabetically by agency and numerically by frequency. Using the suggestions on pages 2-3, you can make an intelligent guess at what frequency your local service may use. To identify unknown stations, the call sign data are essential. You can order Police Call direct from U.S. Radio Data, Inc., Lebanon, NJ 08833. If you buy a copy in a store, be sure to get the latest edition.
If you live in any but the most rural area, there will be many agencies to monitor; you will want to learn their frequencies and system details and to keep track of what you learn. The Police Call listings may show more frequencies than are actually in use and may omit some agencies of special interest to you. Therefore you will need some other sources of information, especially if your're buying crystals. A good place to start is the local electronics shop which sells a lot of scanners. If they don't know, or if you are dealing with many complex cross-boundary dispatching arrangements for instance, try the direct approach and call the agencies involved. Often the best source will be in the local RCMA membership.
If you've been collecting for a while, you may have a large number of bits and scraps of paper and lists of various origin. How to organize the mass of data so you can find things easily? There are two basic approaches: card file, or typewritten list, arranged alphabetically by agency, or a file or list arranged numerically by frequency. The first method is useful for setting up a programmable scanner quickly when you want to follow the action closely, while the second is best for identifyning new stations. Whichever approach you choose to use, each item in your file will need a minimum entry including the agency name, the call sign and the frequency. Other information may

Beginners Corner (continued)

be included, but be a bit cautious here, especially if you have a large number to deal with. Other data could include, for instance, date of verification, agency channel designation such as "F1", whether the frequency is a repeater output or input, the geographic area covered, or the radio service. You may even wish to design your own file card and have them printed. If you take this route, give careful consideration to which data you will really need in the long term and be sure to leave space for comments.

In closing, you can enhance you enjoyment of monitoring considerably, if you have well designed system for keeping your frequency information and for getting at it quickly.

contact / info wanted

The purpose of this column is twofold: 1) CONTACT --- It helps members to contact other members. If you want to meet, telephone or correspond with other members (by letter or cassette tape) in a certain geographic area or with members who have similar listening interests, this is the place to say so. 2) INFO WANTED --- This column helps members to obtain information directly from other members on various subjects related to two-way communications monitoring above 30 MHz.

Members who wish to contact you will do so directly, so be sure to give your phone number and best time to call and/or your address. Write to: Larry H. Brown, 1717 Leith St., Flint, MI 48506.

I would like to meet or correspond with members here in the Wasnington Metropolitan Area to exchange frequency info. I can research & provide selected worldwide Air Traffic Control frequencies upon receipt of an SASE. ROD BOURNE (VA-012), 4500 S. Four Mile Run Drive, Apt. 526, Arlington, VA 22204, (703) 671-6317 (6-8 PM EST).

I am interested in corresponding with monitoring rail-fans. H. MICHAEL YUHAS (NY-058), P.O. Box 343, Port Jefferson, NY 11777.

I would like to correspond with members who are interested in out of band operation of Regency and Bearcat scanners. Also would like to contact U.S. members in Buffalo, N.Y. area for mutual information exchange and possible meetings. RORY McEVOY (CAN-003), 12 Castlegrove Blvd., Unit 9, Don Mills, Ontario M3A 1K8, (416) 449-4170 (7-10 PM EST).

Since reprints are no longer available, I wonder if I could possibly borrow a copy of the October Newsletter to copy for myself. I'll pay postage both ways and guarantee to return it as soon as possible in exactly the same condition that I receive it. I would also like to hear from anyone in Eastern New England (especially Massachusetts) on any subject that they monitor. I would be very interested in hearing from members anywhere in the country, or other countries for that matter, who own a Bearcat 220 to hear their reaction to it. JIM BROADBENT (MA-024), 78 Squanto Rd., North Weymouth, MA 02191, (617) 337-5831 (after 4:15 PM).

I'm interested in contacting RCMA members in my area to exchange monitoring notes and information for my area and state: J.L. RODRIGUEZ, 1092 Ibis Avenue, Miami Springs, FL 33166, (305) 885-5408.

For copies of the R.C.M.A. meetings (voice tape) please send an C-90 or C-120 tape plus return postage and your address with club number to:

Mr. Rick Alday (Ca Ri 009)
P.O. Box 639
Lake Elsinore, Ca,
92330

MONITORING & THE LAW

Bob McGovern, Editor

Send all articles, references, copies of monitoring laws and questions pertaining to the legal aspects of monitor radio listening to: Bob McGovern, P.O. Box 5041, Lighthouse Point, FL 33064.

Due to my present workload and shortage of free time, I am unable to supply my column for the February Newsletter. However, I expect to have everything under control in time for the next issue ... Bob

MARKETPLACE

Members may advertise, free of charge, items wanted, items for sale and items for trade that are associated with the hobby of monitor radio listening above 30 MHz. No dealer ads accepted. Send to: Larry H. Brown, 1717 Leith St., Flint, MI 48506.

FOR SALE: Regency TME-16H/L/U with crystals 39.46, 39.48, 39.60, 39.70, 39.72, 39.94, 42.00 42.12, 154.25, 154.34, 155.19, 453.475 and 463.10. Excellent condition, $75.00. GREG RAMSDELL (CA-LA-101), 2961 Blakeman Ave., Rowland Heights, CA 91748, phone (213) 965-2833 (after 6:00 PM PST).

WANTED: I want to purchase scanners and antennas in the western New York area. Very interested in obtaining a Panasonic RE 1800 (not available in Canada). Will also purchase some 10.7 IF cyrstals applicable to the Toronto area. RORY McEVOY (CAN-003), 12 Castlegrove Blvd., Unit 9, Don Mills, Ontario, Canada M3A 1K8, (416) 449-4170 (7-10 PM EST).

FOR SALE: Bearcat crystals (10.8 MHz) -- 153.890, 154.385, 154.695, 154.740, 154.800, 155.160, 155.220, 155.310, 155.445, 155.520, 155.550, 158.730, 158.790, 158.970, 159.030, 159.090, 453.250 and 453.350. $2.50 each or all 18 for $35.00. KEN FITZGERALD, P.O. Box 307, Springer, OK 73458, phone (405) 653-2641.

FOR SALE; Ultra model 308 scanner. Xtal controlled, 8-channel, 3 band scanner with whip antenna and ac-cord. Has instruction booklet, 7 vhf xtals and is in like new cnd. Shipped prepaid. Price $55. Larry E. Price (GA-009) P.o. Box 2067, Georgia Southern Station, Statesboro, GA. 30458.

This column is for the convenience of members who want to sell or buy a piece of monitor related equipment, etc. The club assumes no responsibility for the outcome of any transactions between members. In the November issue, a PRO-4 was advertised by one member and purchased by mail and not received by another member. This is unfortunate. When buying something from another member who you do not know you are taking a risk. Most sellers and buyers probably have no problems but once in awhile there can be a problem. Take whatever safeguards you feel are necessary to assure safe delivery. IBR

NEW MEMBERS

AL-006 Richard J. Palsulich, 104 Chewalla Dr., Enterprise, AL 36330
AZ-013 Wm. R. Gardner, 14450 N. Fountain Hills Blvd., Fountain Hills, AZ 85268
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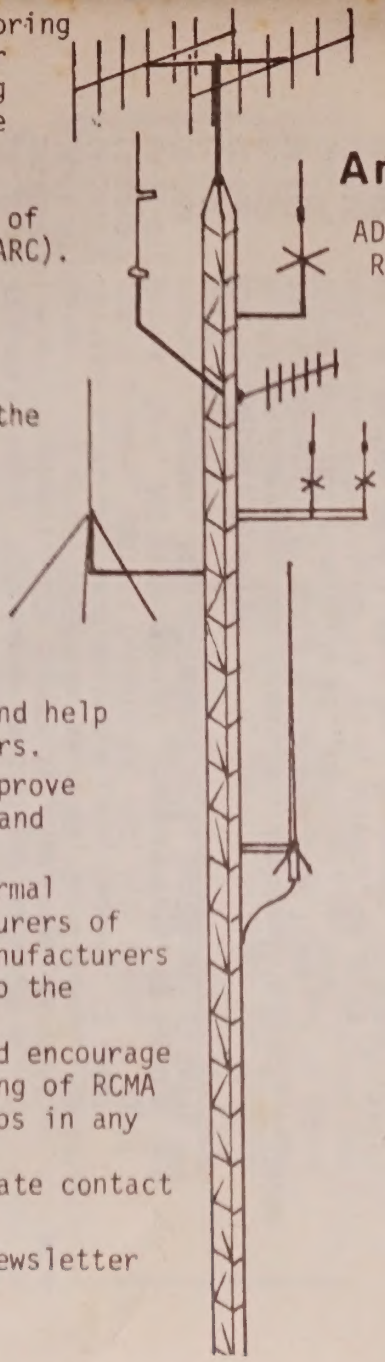
The Radio Communications Monitoring Association is a radio club for persons interested in listening to two-way communications above 30 MHz as a hobby. RCMA was founded in May 1975 and is a Full Member of the Association of North American Radio Clubs (ANARC).

The goals of RCMA are:

1) To provide a fraternity for those who seriously pursue the hobby of monitor radio listening.
2) To try to be knowledgeable about two-way radio systems and operations.
3) To promote an understanding of the legal and ethical uses of monitor receivers.
4) To share information with and help other monitor radio listeners.
5) To try to understand and improve receivers, antenna systems and related equipment.
6) To offer suggestions and formal recommendations to manufacturers of monitor receivers and to manufacturers of other products related to the hobby.
7) To offer suggestions for and encourage the organizing and conducting of RCMA meetings and tours for groups in any geographic area.
8) To encourage and to facilitate contact between members.
9) To publish a regular club newsletter devoted to the hobby.



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